AUDITORY RESEARCH LABORATORY

State University of New York at Plattsburgh
Plattsburgh, New York   12901

1997

FINAL REPORT (Part 2)

Use of animal test data in the development of a
human auditory hazard criterion for impulse noise

JAYCOR SUBCONTRACT AGREEMENT NO:
950342

20000809 091

ARL

DTIC QUALITY INSPECTED 4

JAYCOR

August 3, 2000

DTIC
Attn: Ms. Pat Mawby, DTIC/OCA
8725 John J. Kingman Rd – Suite 0944
Fort Belvoir, VA 22060-6218

RE: Documents to Include in DTIC Database

Dear Pat:

Enclosed are two documents that Dr. Philemon Chan of Jaycor would like to have available for public distribution through DTIC. There are no distribution limitations for either one.

Please note that Jaycor is moving to a new location August 11th. Our new address is:

Jaycor, Inc.
3394 Carmel Mountain Road
San Diego, CA 92121-1002

My new phone number will be (858) 720-4115. Please call if you have any questions.

Sincerely,

Brenda Ives
Group Support Specialist
Simulation, Engineering & Technology Group

Encls.

PS: Hope you're feeling much better!!

FINAL REPORT (Part 2)

Use of animal test data in the development of a
human auditory hazard criterion for impulse noise

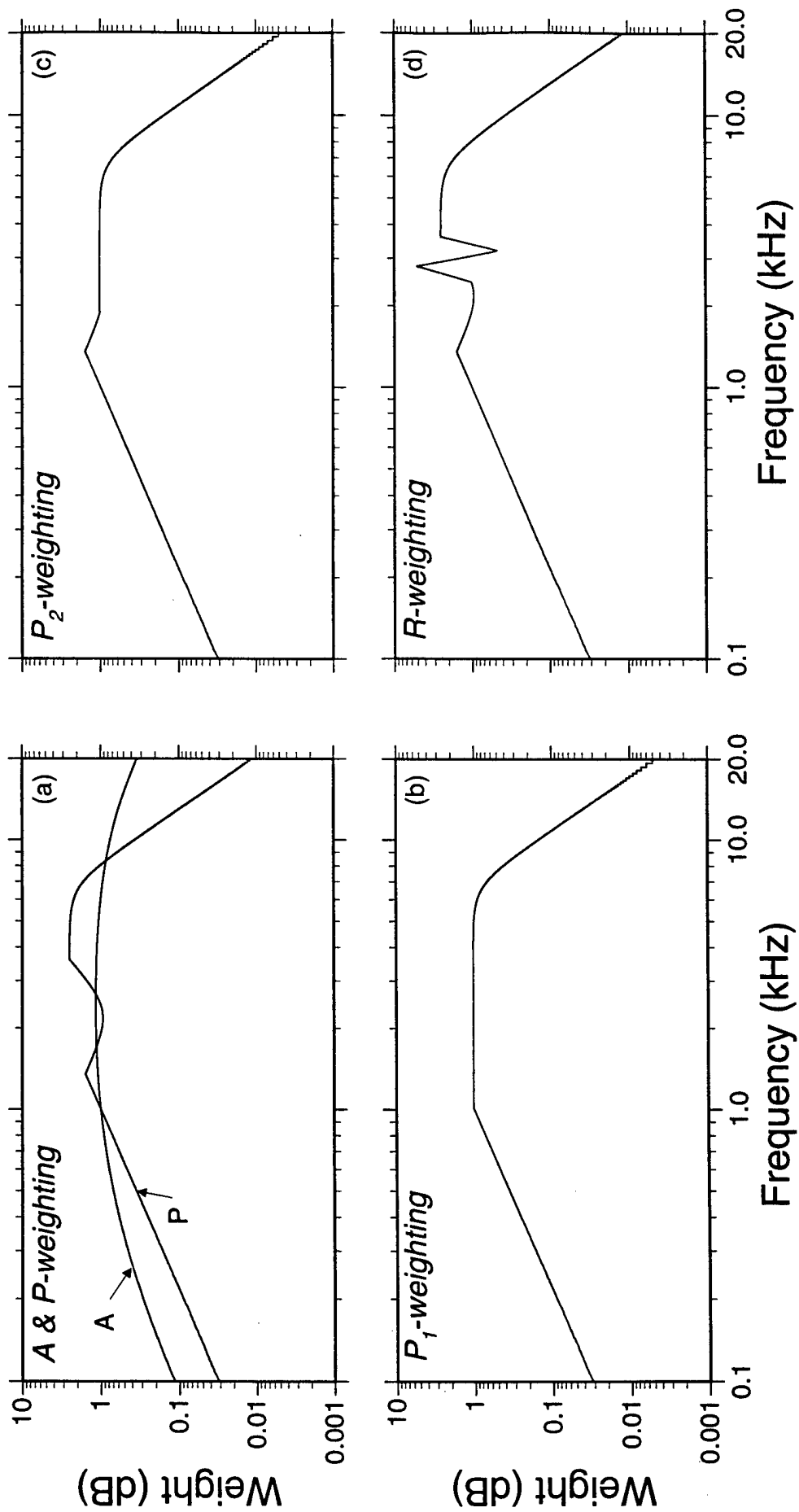JAYCOR SUBCONTRACT AGREEMENT NO:
950342

Figure 1. Graphical represention of the weighting functions used to compute some of the hazard indicies [Patterson et al. (1993)].
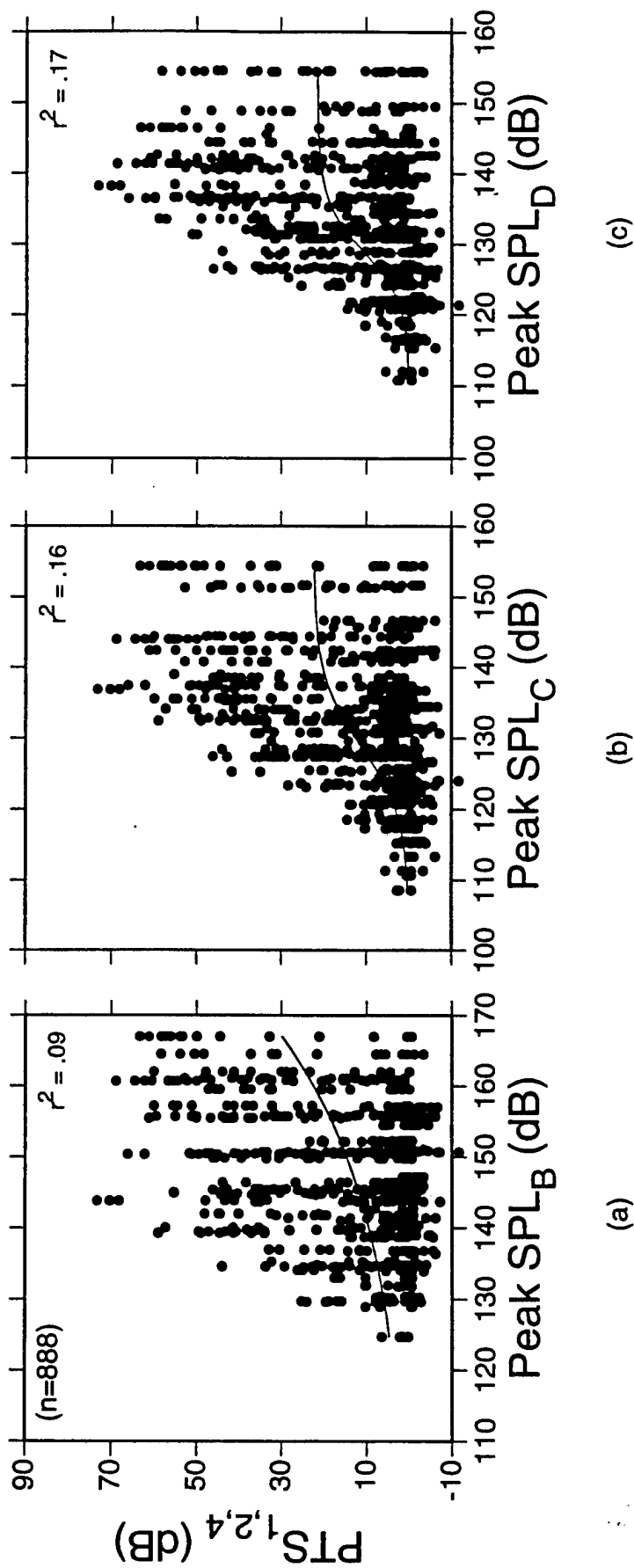
Figure 2 (a-c)   Average PTS measured at the 1, 2, and 4 kHz test frequencies of each animal (n=888) exposed to the

indicated level of the hazard index (a) Peak SPL_B, (b) Peak SPL_C, and (c) Peak SPL_D. The solid line is

the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of

Equation (20) corresponding to each regression line are listed in Table 1. (r^2 = coefficient of
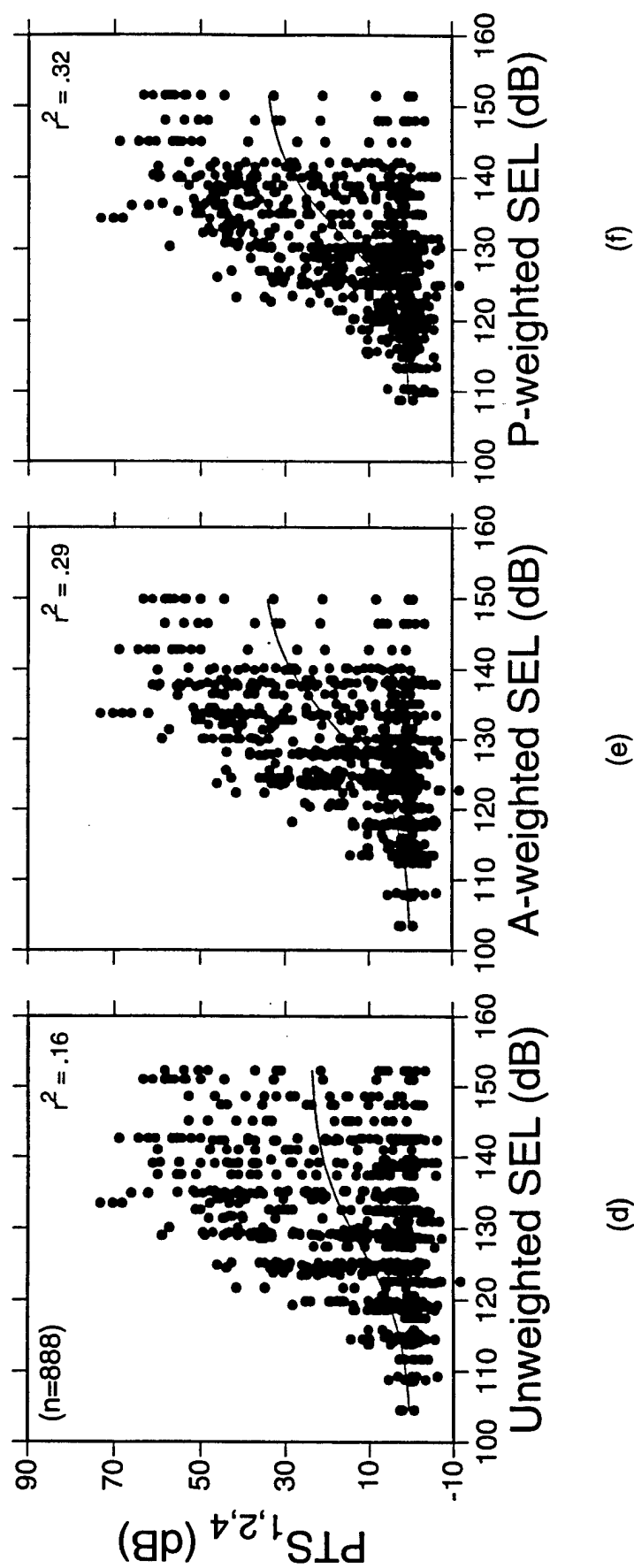
determination)

Figure 2 (d-f) Average PTS measured at the 1, 2, and 4 kHz test frequencies of each animal (n=888) exposed to the indicated level of the hazard index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 1. (r^2 = coefficient of determination)
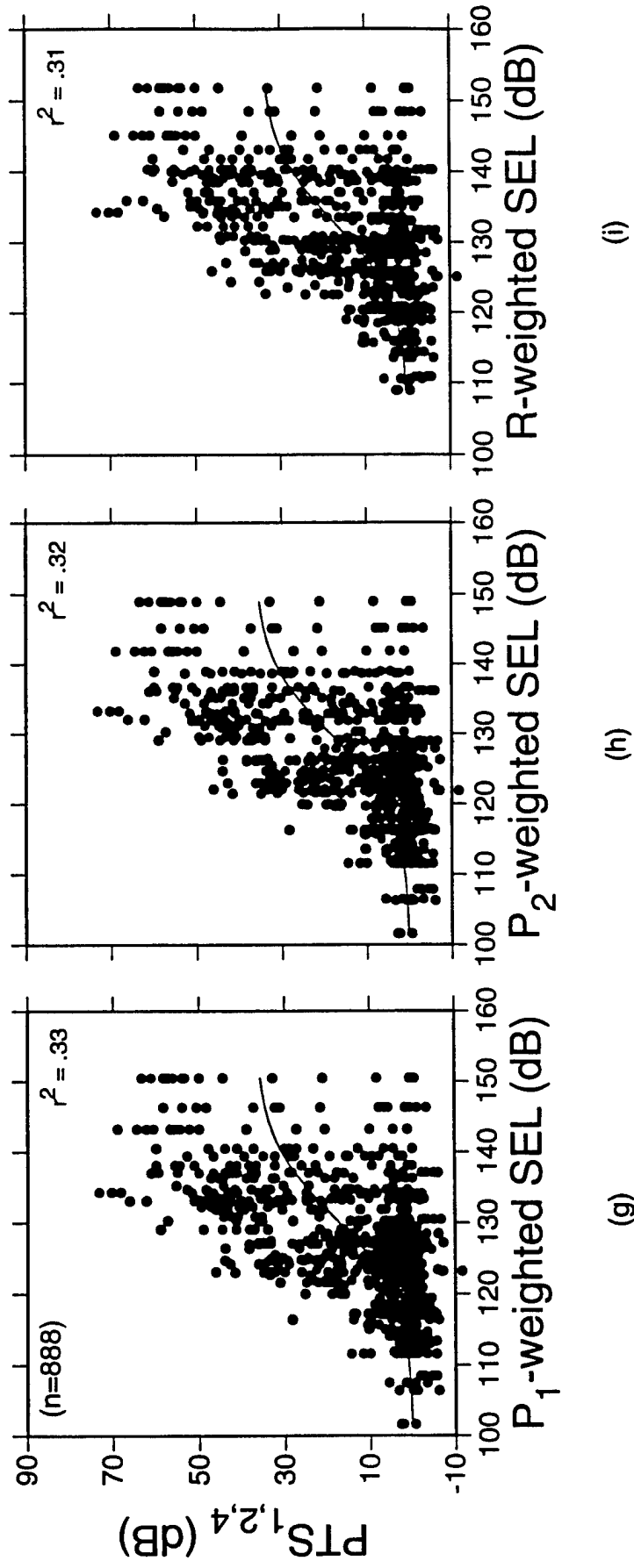
Figure 2 (g-i)   Average PTS measured at the 1, 2, and 4 kHz test frequencies of each animal (n=888) exposed to the

indicated level of the hazard index (g) P_1-weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL.

The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B,

and C of Equation (20) corresponding to each regression line are listed in Table 1. (r^2 = coefficient of
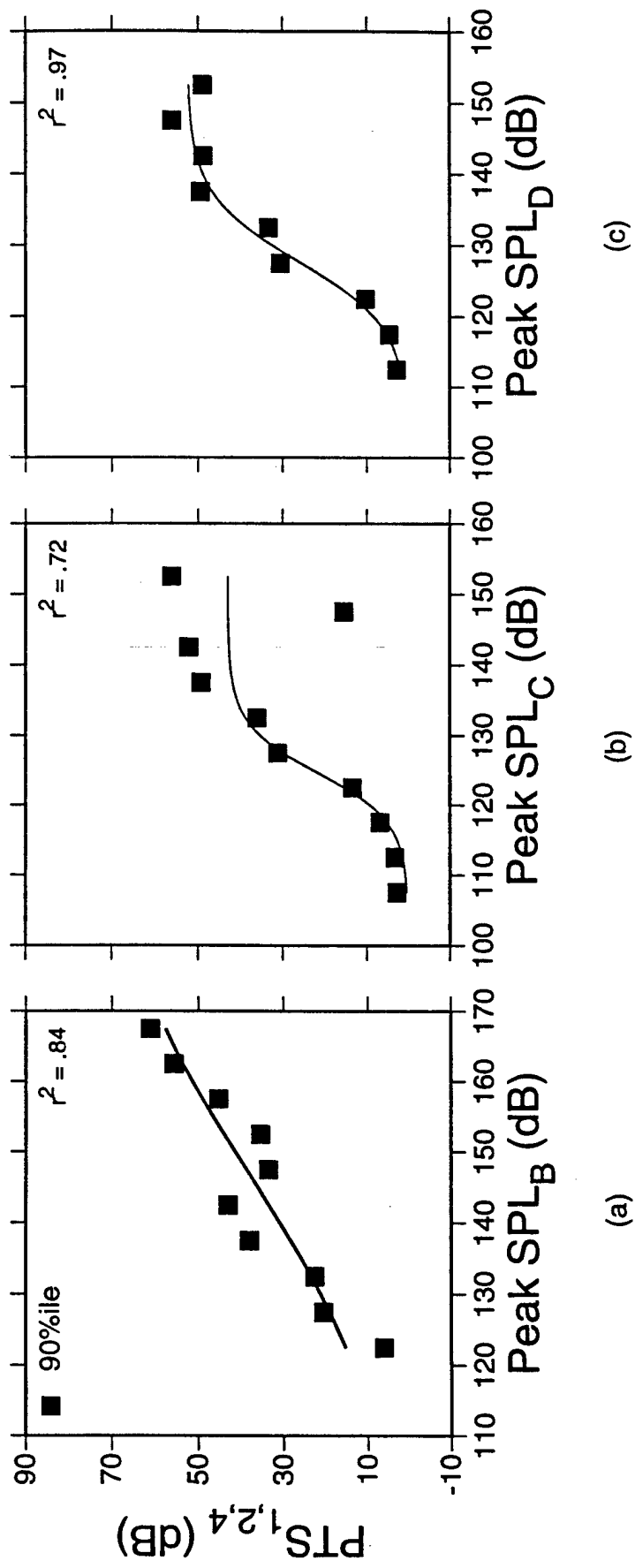
determination)

Figure 3 (a-c)   The 90th percentile average PTS measured at the 1, 2, and 4 kHz test frequencies for all animals

falling within 5 dB bins of the indicated level of the hazard index (a) Peak SPL_B, (b) Peak SPL_C, and

(c) Peak SPL_D. The solid line is the nonlinear regression fit of Equation (20) to the data. The three

parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table

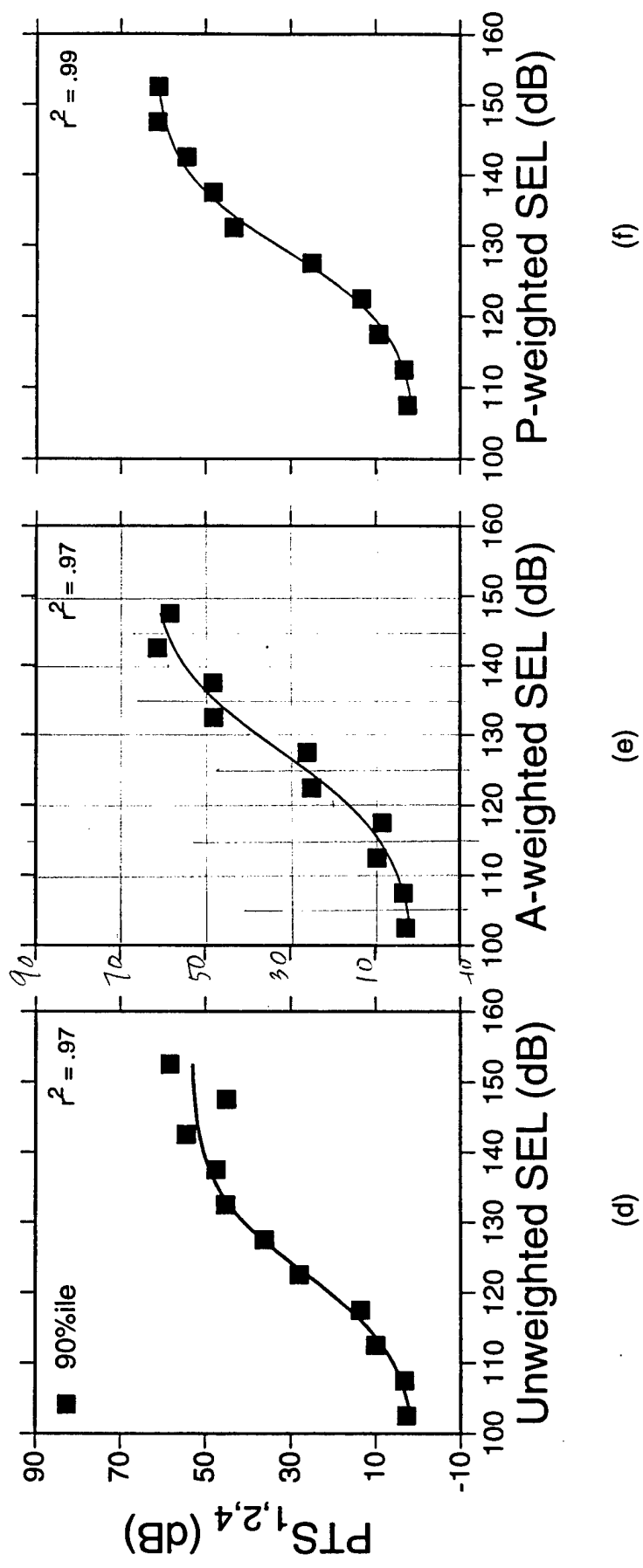1. (r^2 = coefficient of determination)

Figure 3 (d-f) The 90th percentile average PTS measured at the 1, 2, and 4 kHz test frequencies for all animals falling within 5 dB bins of the indicated level of the hazard index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 1. (r^2 = coefficient of determination)
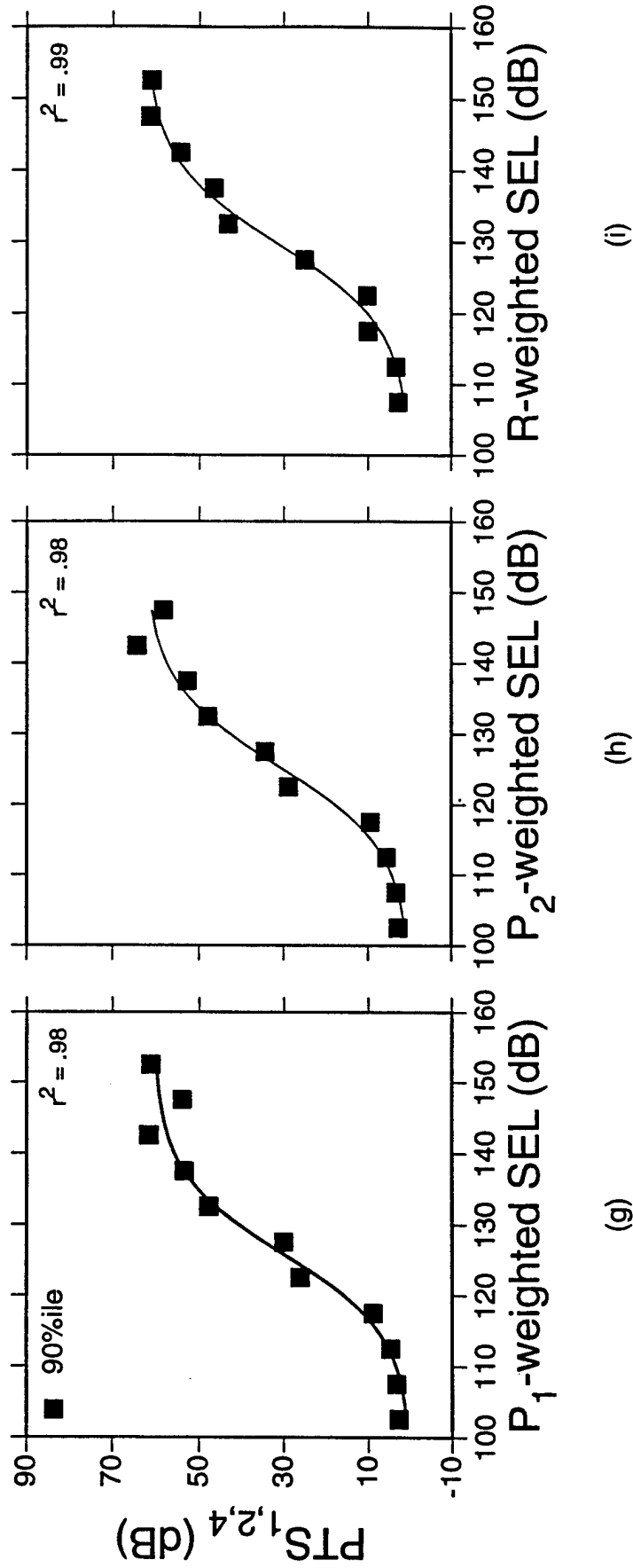
Figure 3 (g-i)   The 90th percentile average PTS measured at the 1, 2, and 4 kHz test frequencies for all animals

falling within 5 dB bins of the indicated level of the hazard index (g) P_1-weighted SEL, (h) P_2-weighted

SEL, and (i) R-weighted SEL.   The solid line is the nonlinear regression fit of Equation (20) to the data.

The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in

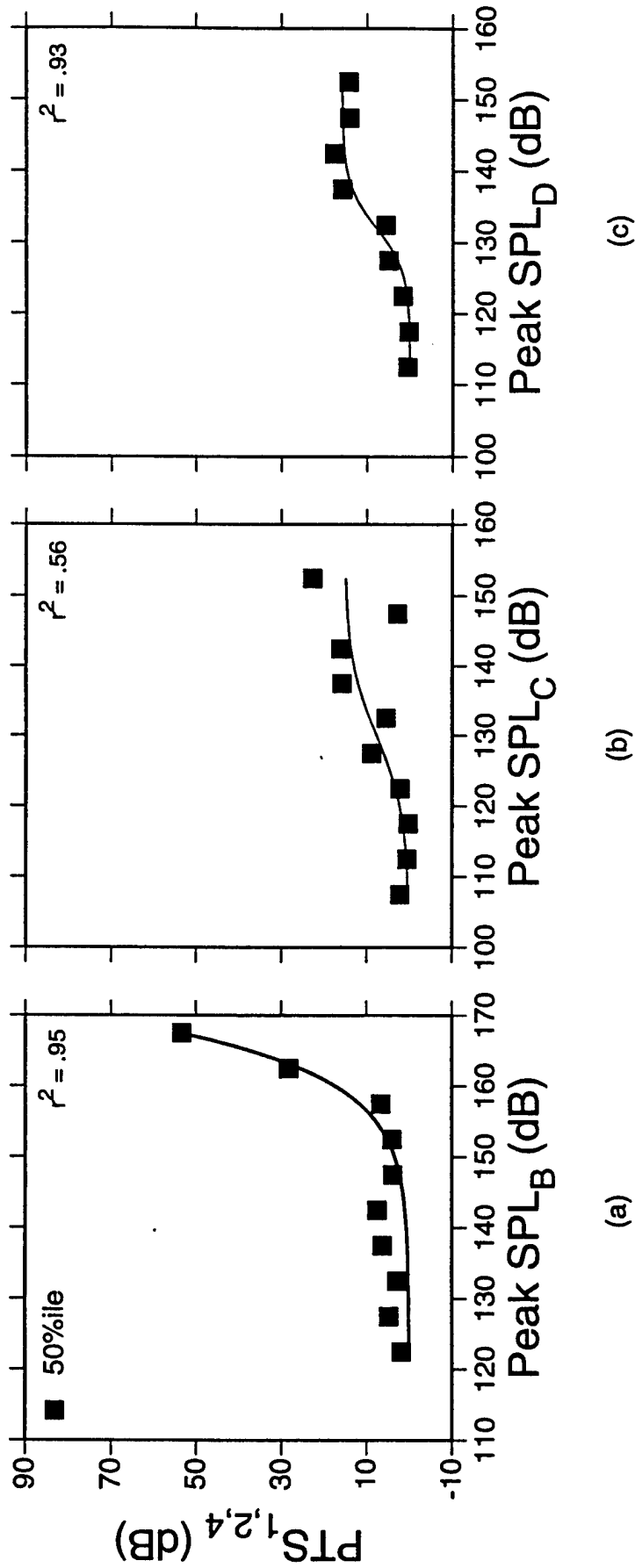Table 1. (r^2 = coefficient of determination)

Figure 4 (a-c)   The 50th percentile average PTS measured at the 1, 2, and 4 kHz test frequencies for all animals falling within 5 dB bins of the indicated level of the hazard index (a) Peak SPL_B, (b) Peak SPL_C, and (c) Peak SPL_D. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in

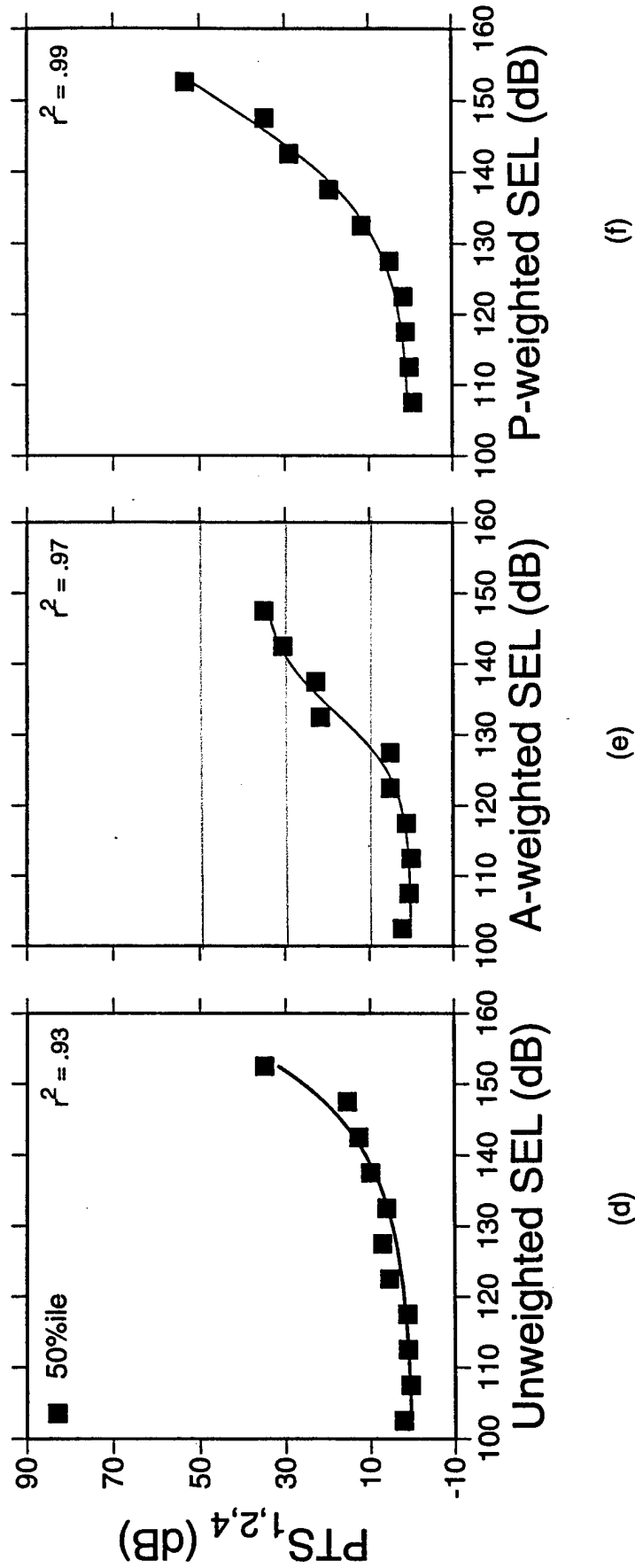Table 1. (r^2 = coefficient of determination)

Figure 4 (d-f)   The 50th percentile average PTS measured at the 1, 2, and 4 kHz test frequencies for all animals

falling within 5 dB bins of the indicated level of the hazard index (d) Unweighted SEL, (e) A-weighted

SEL, and (f) P-weighted SEL.   The solid line is the nonlinear regression fit of Equation (20) to the data.

The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in

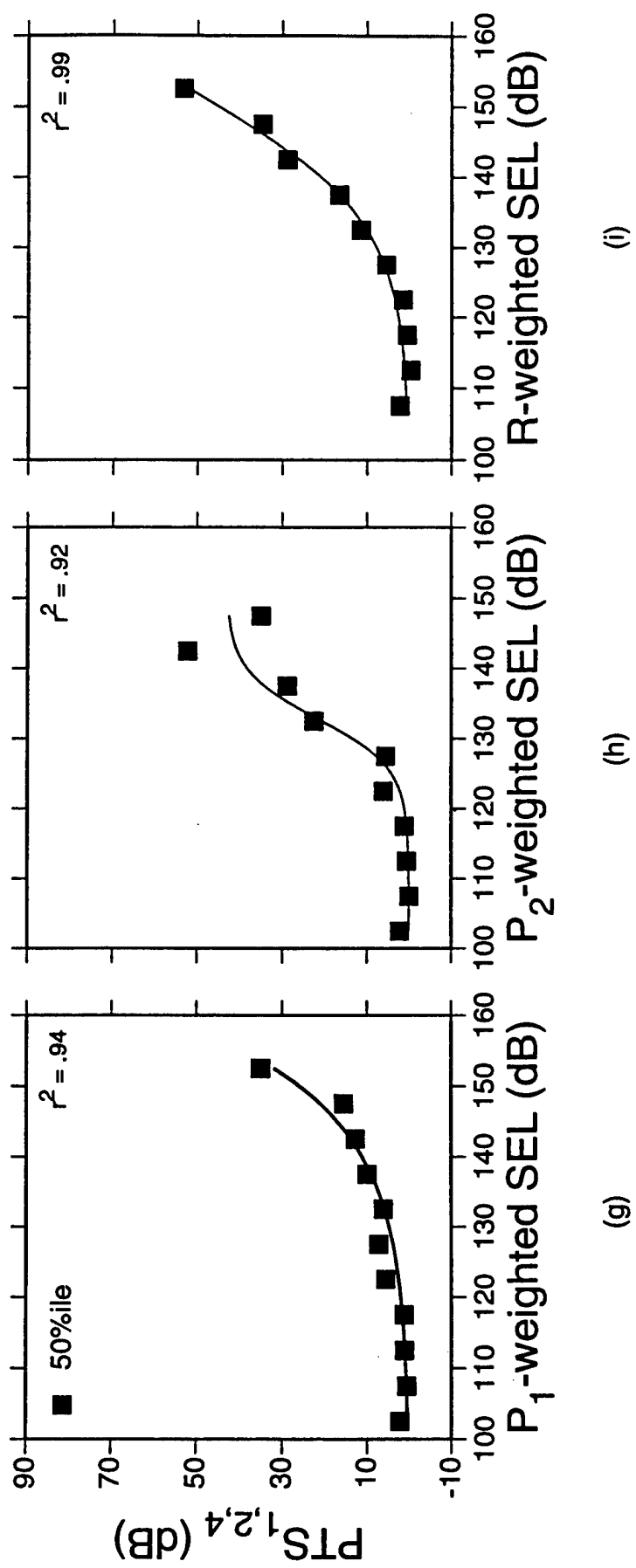Table 1. (r^2 = coefficient of determination)

Figure 4 (g-i)   The 50th percentile average PTS measured at the 1, 2, and 4 kHz test frequencies for all animals

falling within 5 dB bins of the indicated level of the hazard index (g) P_1-weighted SEL, (h) P_2-weighted

SEL, and (i) R-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the data.

The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in

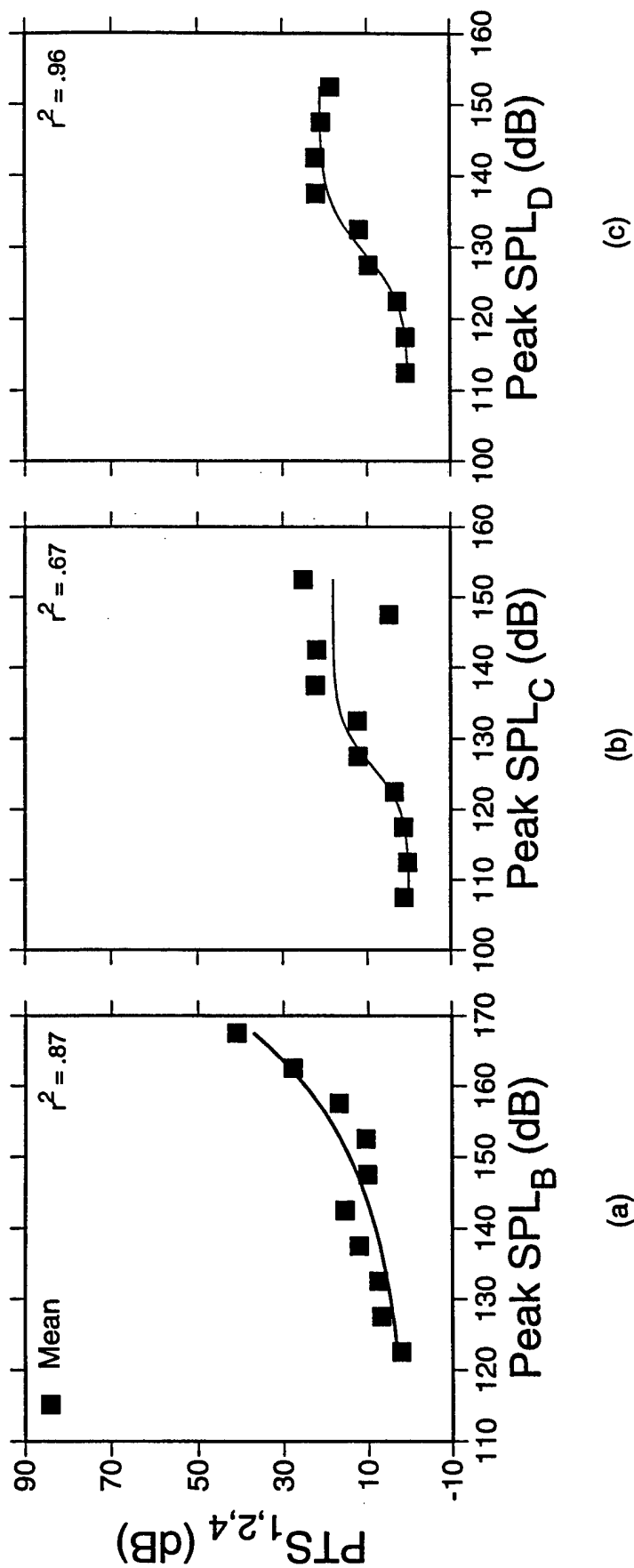Table 1. (r^2 = coefficient of determination)

Figure 5 (a-c)   The mean average PTS measured at the 1, 2, and 4 kHz test frequencies for all animals falling within 5

dB bins of the indicated level of the hazard index (a) Peak SPL$_B$, (b) Peak SPL$_C$, and (c) Peak SPL$_D$.

The solid line is the nonlinear regression fit of Equation (20) to the data.   The three parameters, A, B,

and C of Equation (20) corresponding to each regression line are listed in Table 1. (r^2 = coefficient of
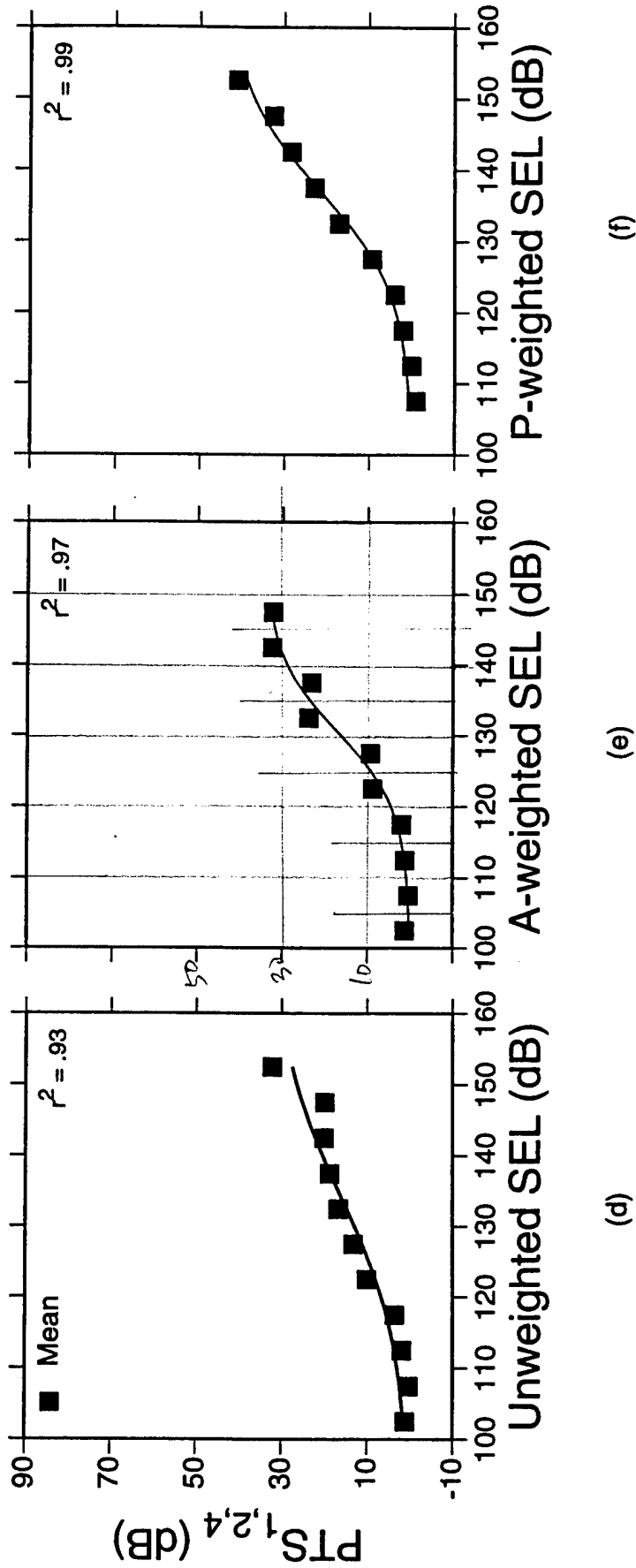
determination)

Figure 5 (d-f)   The mean average PTS measured at the 1, 2, and 4 kHz test frequencies for all animals falling

within 5 dB bins of the indicated level of the hazard index (d) Unweighted SEL, (e) A-weighted

SEL, and (f) P-weighted SEL.   The solid line is the nonlinear regression fit of Equation (20) to the

data.   The three parameters, A, B, and C of Equation (20) corresponding to each regression line

are listed in Table 1. (r^2 = coefficient of determination)
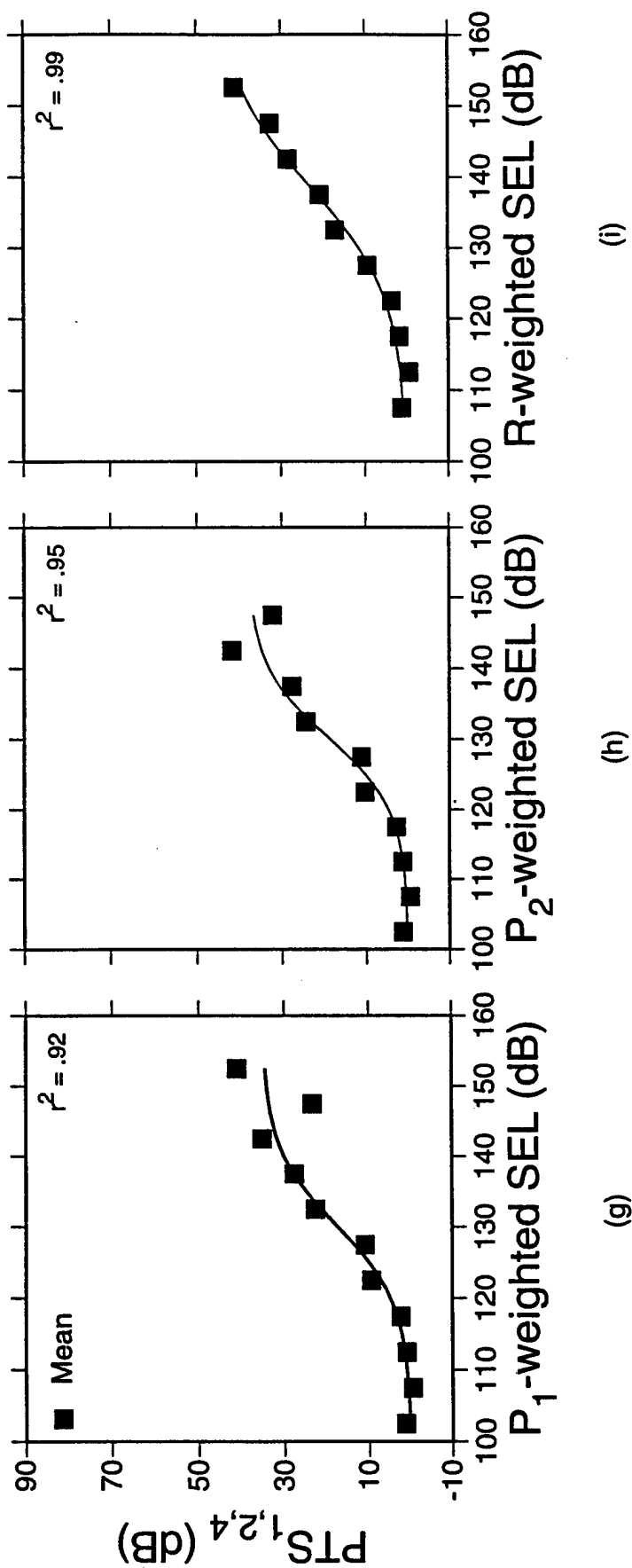
Figure 5 (g-i)   The mean average PTS measured at the 1, 2, and 4 kHz test frequencies for all animals falling

within 5 dB bins of the indicated level of the hazard index (g) P_1-weighted SEL, (h) P_2-weighted

SEL, and (i) R-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the

data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line

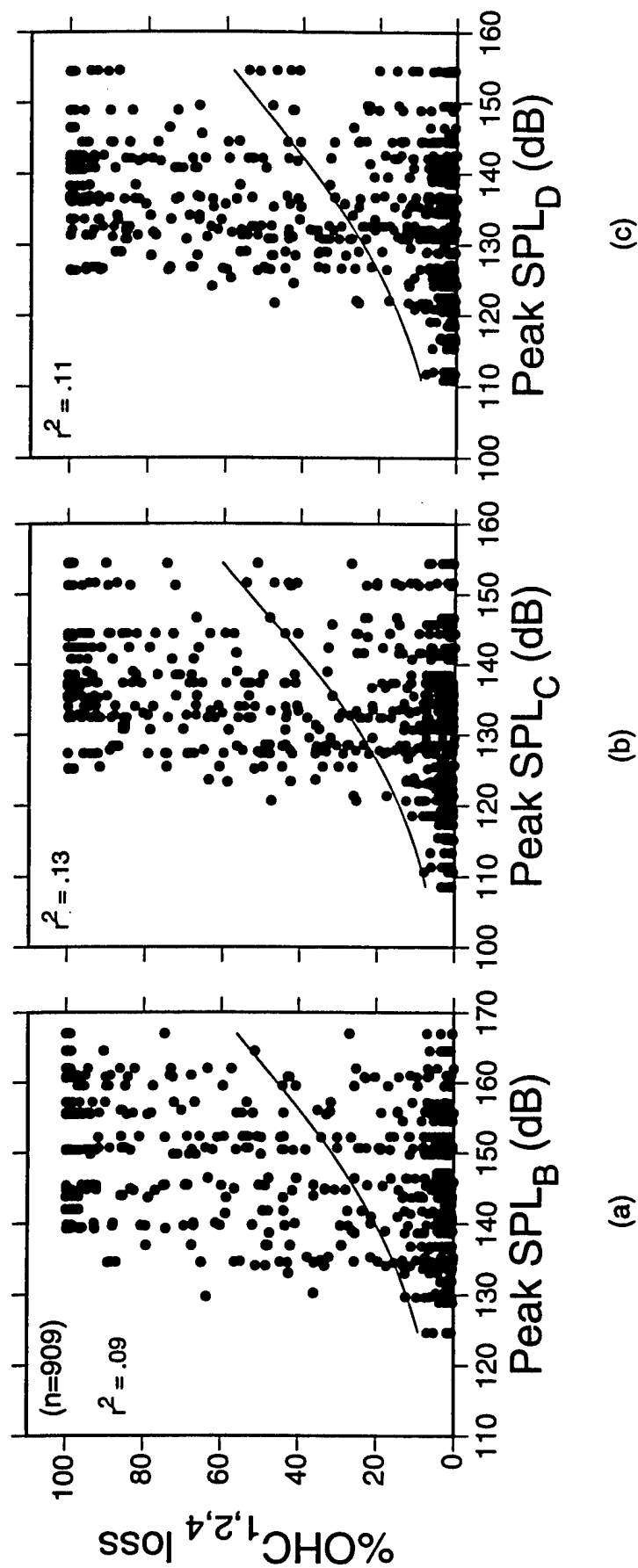are listed in Table 1. (r^2 = coefficient of determination)

Figure 6 (a-c)   The average percent OHC loss in the cochlea over octave-band lengths of the basilar membrane

centered at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for all

animals (n=909) exposed to the indicated level of the hazard index (a) Peak SPL_B, (b) Peak SPL_C,

and (c) Peak SPL_D. The solid line is the nonlinear regression fit of Equation (20) to the data. The

three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in

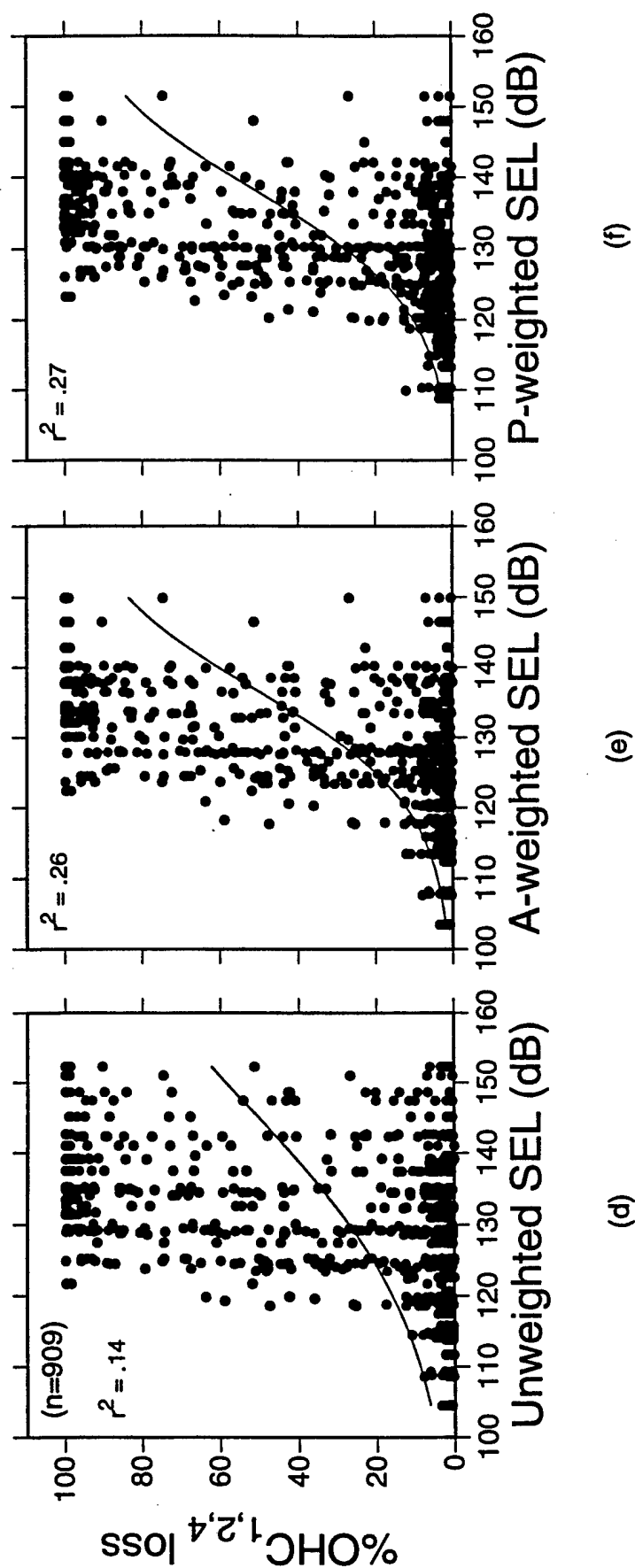Table2. (r^2 = coefficient of determination)

Figure 6 (d-f)   The average percent OHC loss in the cochlea over octave-band lengths of the basilar membrane centered at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for all animals (n=909) exposed to the indicated level of the hazard index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL.   The solid line is the nonlinear regression fit of Equation (20) to the data.   The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 2. (r^2 = coefficient of determination)
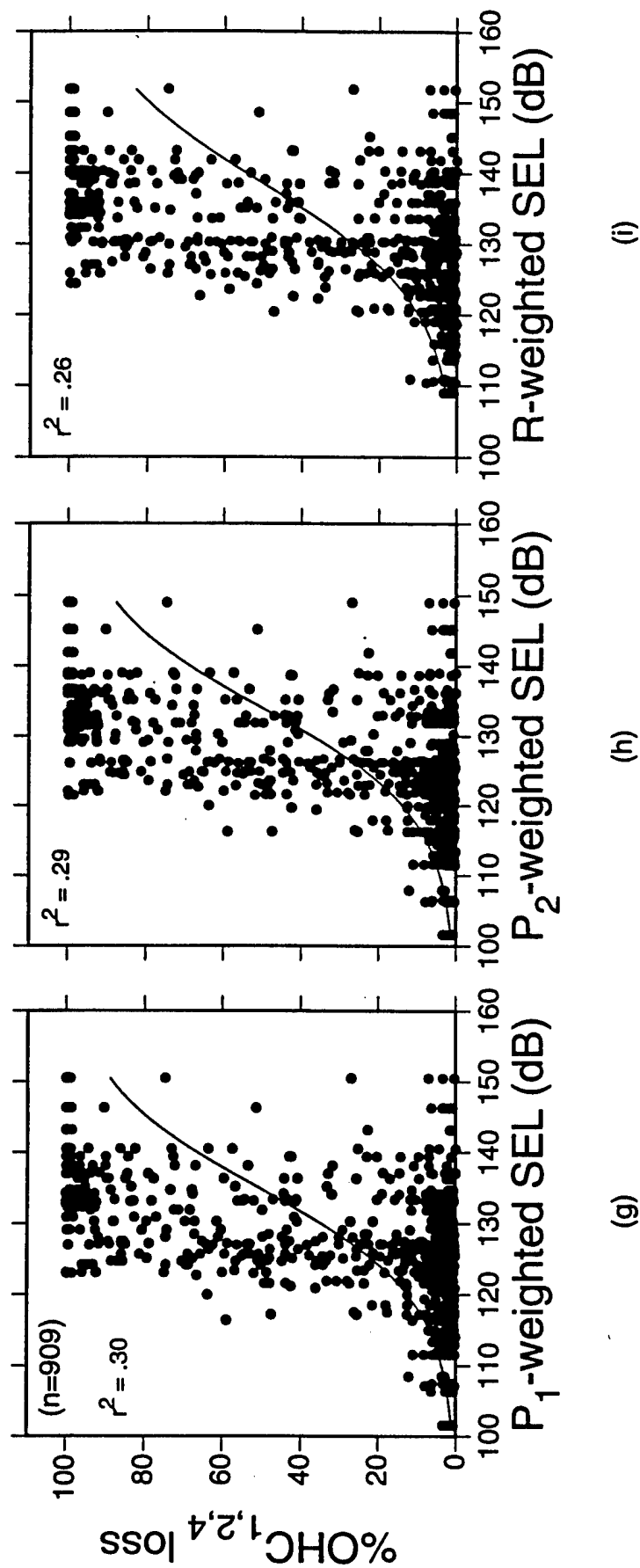
Figure 6 (g-i)   The average percent OHC loss in the cochlea over octave-band lengths of the basilar membrane

centered at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for all

animals (n=909) exposed to the indicated level of the hazard index (g) P_1-weighted SEL, (h) P_2-

weighted SEL, and (i) R-weighted SEL.   The solid line is the nonlinear regression fit of Equation

(20) to the data.   The three parameters, A, B, and C of Equation (20) corresponding to each

regression line are listed in Table 2. (r^2 = coefficient of determination)
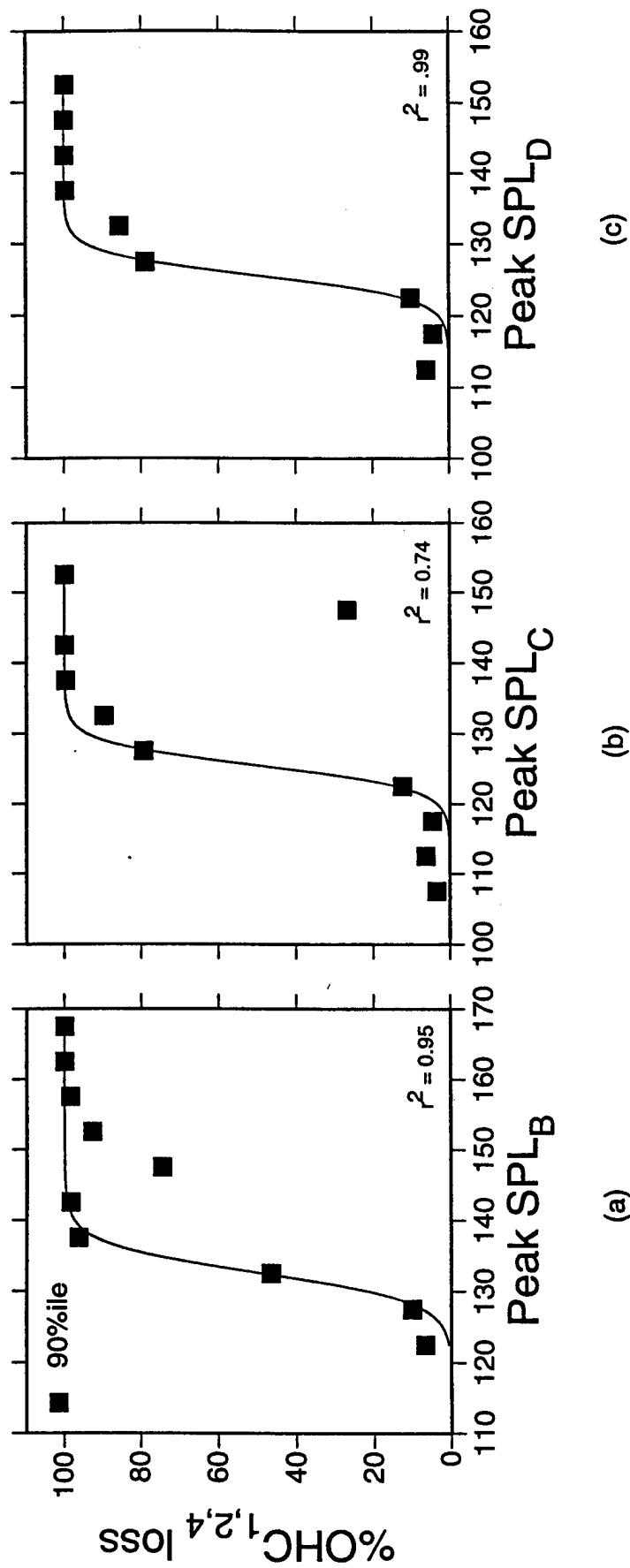
Figure 7 (a-c)   The 90th percentile of percent OHC loss in the cochlea over octave-band lengths of the basilar membrane centered at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for all animals falling within 5 dB bins of the indicated level of the hazard index (a) Peak SPL_B, (b) Peak SPL_C, and (c) Peak SPL_D. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 2. (r^2 = coefficient of determination)
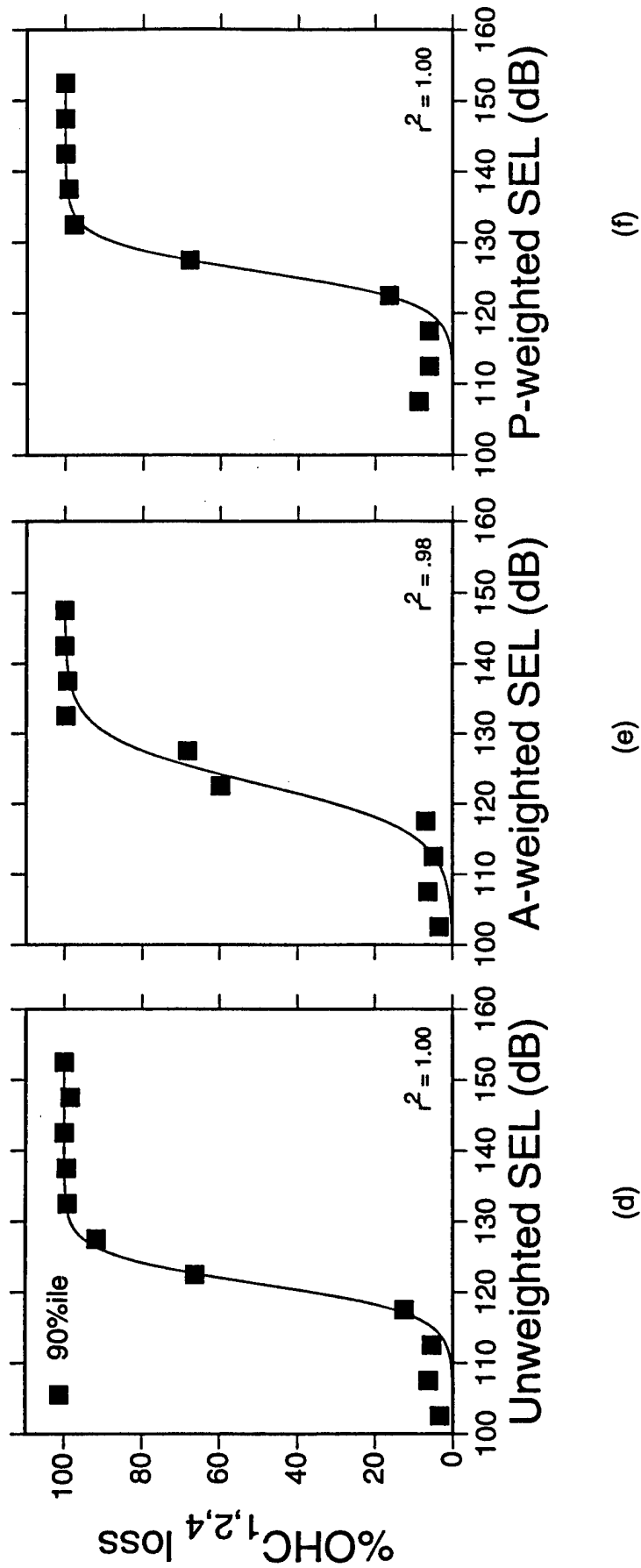
Figure 7 (d-f)   The 90th percentile of percent OHC loss in the cochlea over octave-band lengths of the basilar membrane centered at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for all animals falling within 5 dB bins of the indicated level of the hazard index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 2. (r^2 = coefficient of determination)
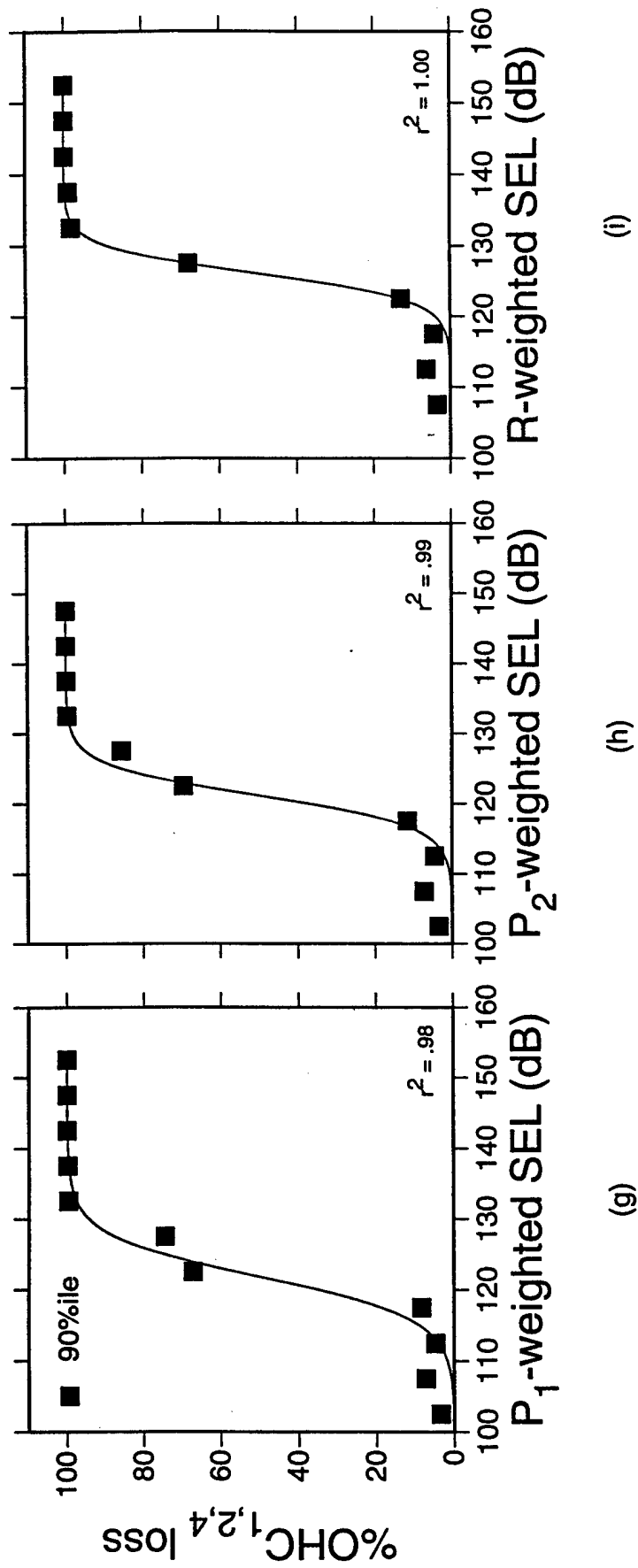
Figure 7 (g-i) The 90th percentile of percent OHC loss in the cochlea over octave-band lengths of the basilar membrane centered at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for all animals falling within 5 dB bins of the indicated level of the hazard index (g) P_1-weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 2. (r^2 = coefficient of determination)
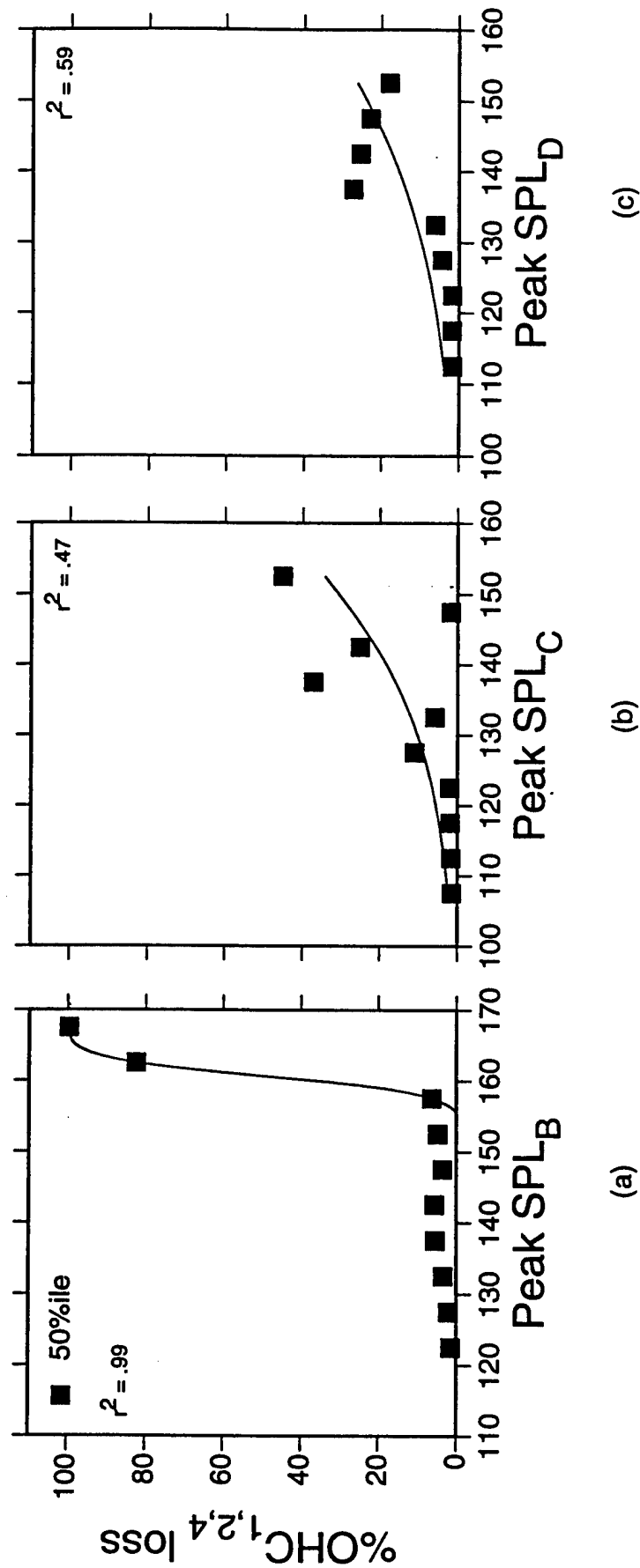
Figure 8 (a-c)   The 50th percentile of percent OHC loss in the cochlea over octave-band lengths of the basilar

membrane centered at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies

for all animals falling within 5 dB bins of the indicated level of the hazard index (a) Peak SPL$_B$, (b)

Peak SPL$_C$, and (c) Peak SPL$_D$.   The solid line is the nonlinear regression fit of Equation (20) to the

data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are

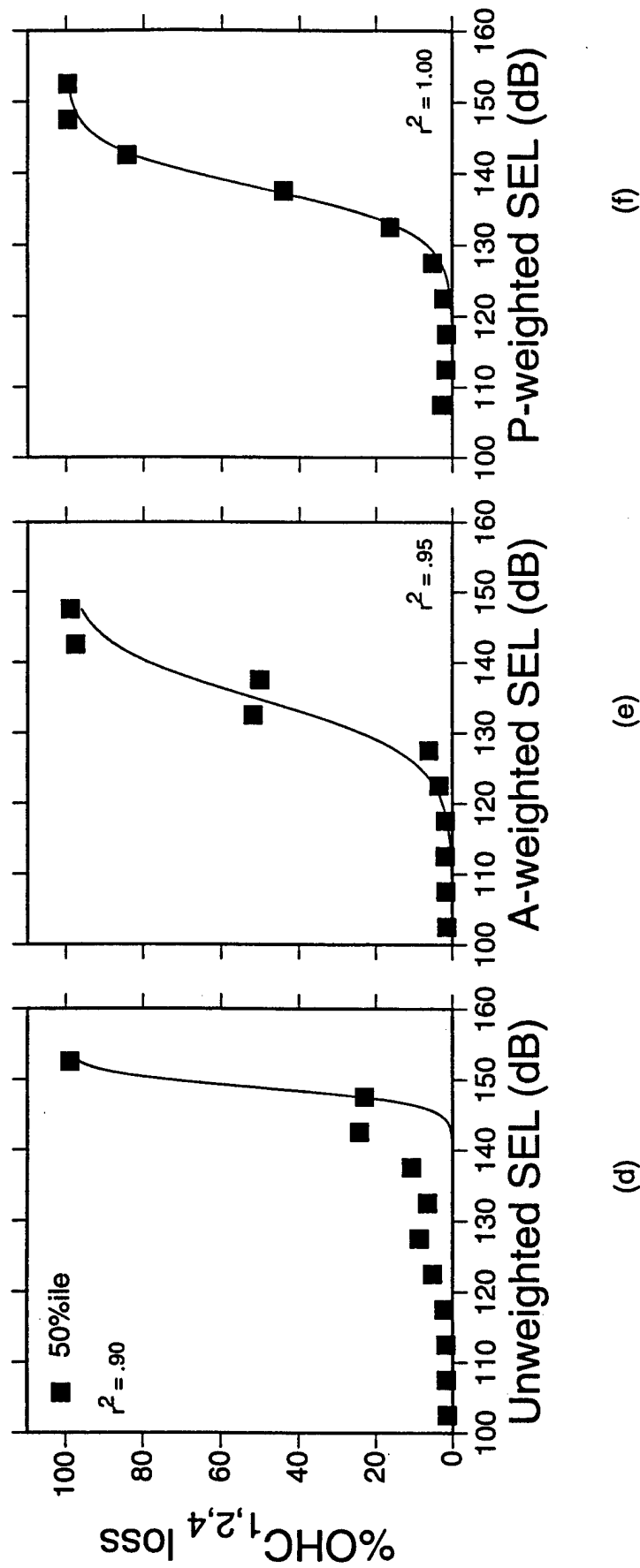listed in Table 2. (r^2 = coefficient of determination)

Figure 8 (d-f)   The 50th percentile of percent OHC loss in the cochlea over octave-band lengths of the basilar

membrane centered at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for

all animals falling within 5 dB bins of the indicated level of the hazard index (d) Unweighted SEL, (e) A-

weighted SEL, and (f) P-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to

the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are

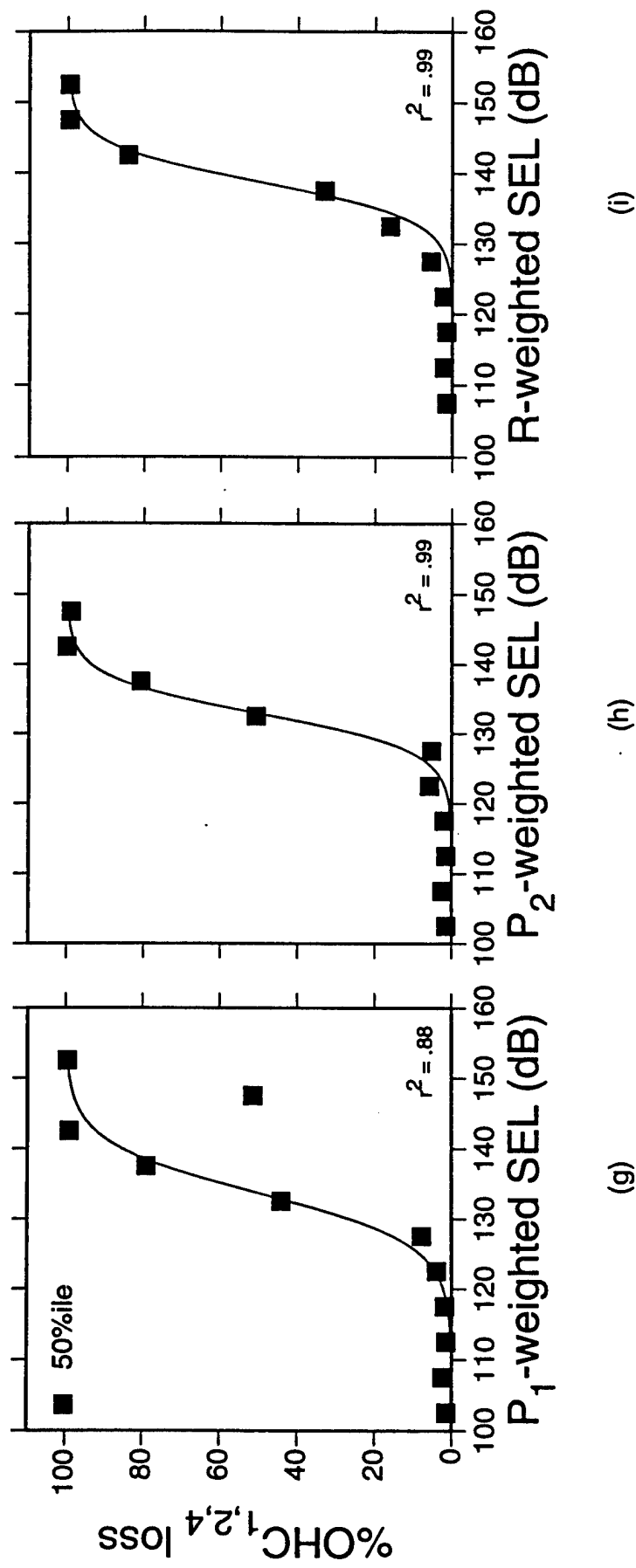listed in Table 2. (r^2 = coefficient of determination)

Figure 8 (g-i)   The 50th percentile of percent OHC loss in the cochlea over octave-band lengths of the basilar membrane centered at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for all animals falling within 5 dB bins of the indicated level of the hazard index (g) P_1-weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 2. (r^2 = coefficient of determination)
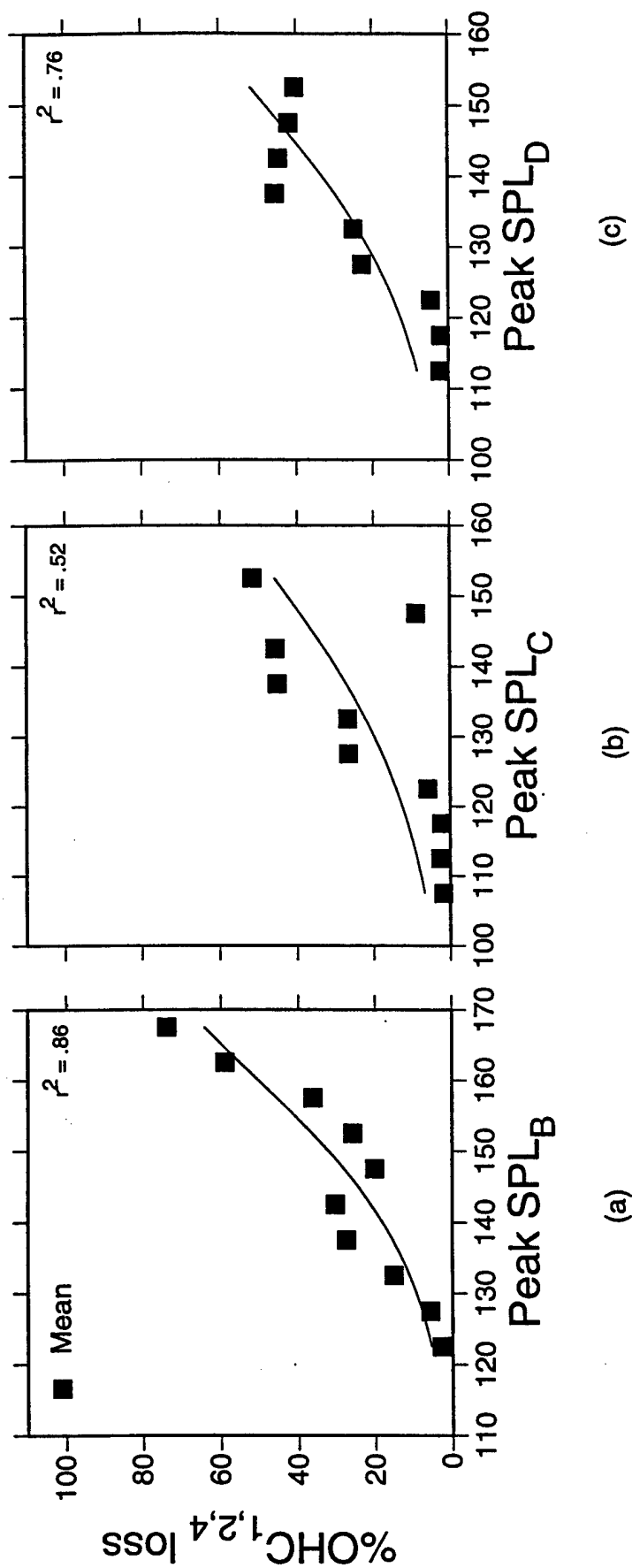
Figure 9 (a-c)   The mean percent OHC loss in the cochlea over octave-band lengths of the basilar membrane

centered at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for all

animals falling within 5 dB bins of the indicated level of the hazard index (a) Peak SPL$_B$, (b) Peak

SPL$_C$, and (c) Peak SPL$_D$.   The solid line is the nonlinear regression fit of Equation (20) to the data.

The three parameters, A, B, and C of Equation (20) corresponding to each regression line are

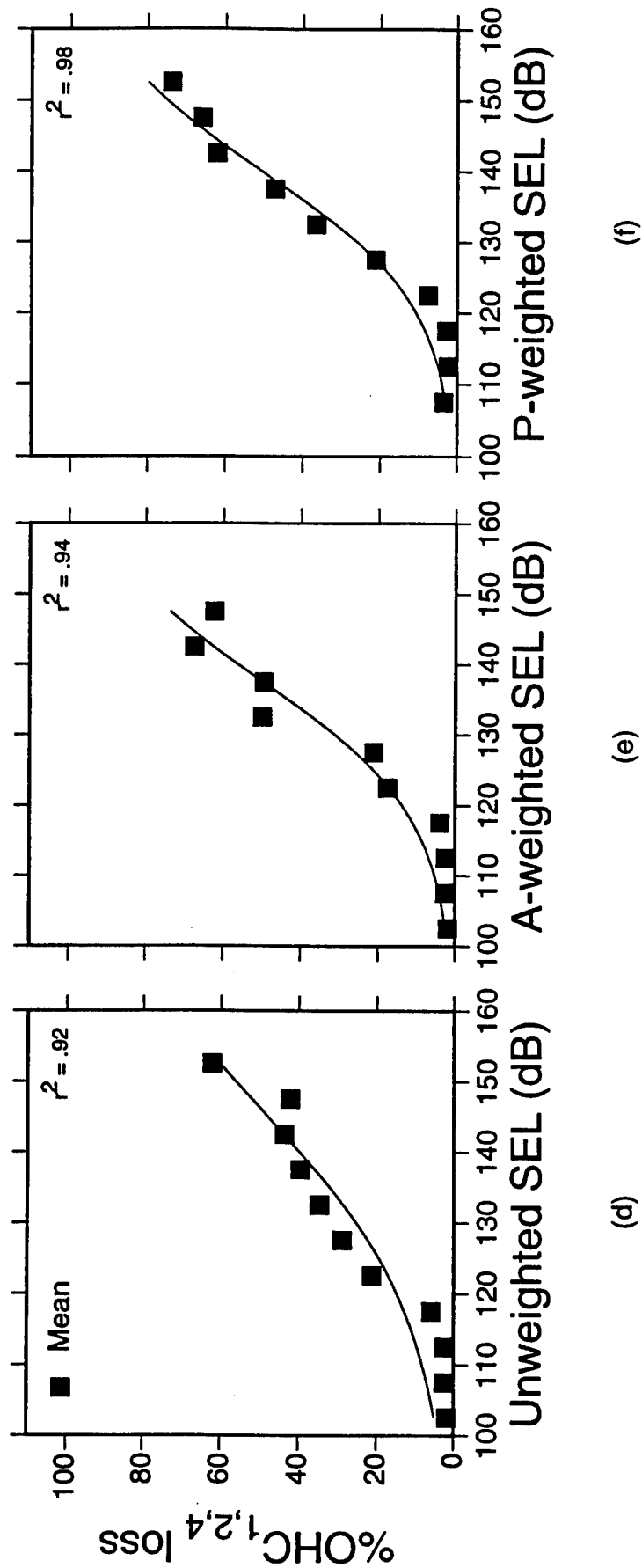listed in Table 2. (r^2 = coefficient of determination)

Figure 9 (d-f)   The mean percent OHC loss in the cochlea over octave-band lengths of the basilar membrane centered at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for all animals falling within 5 dB bins of the indicated level of the hazard index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 2. (r^2 = coefficient of determination)
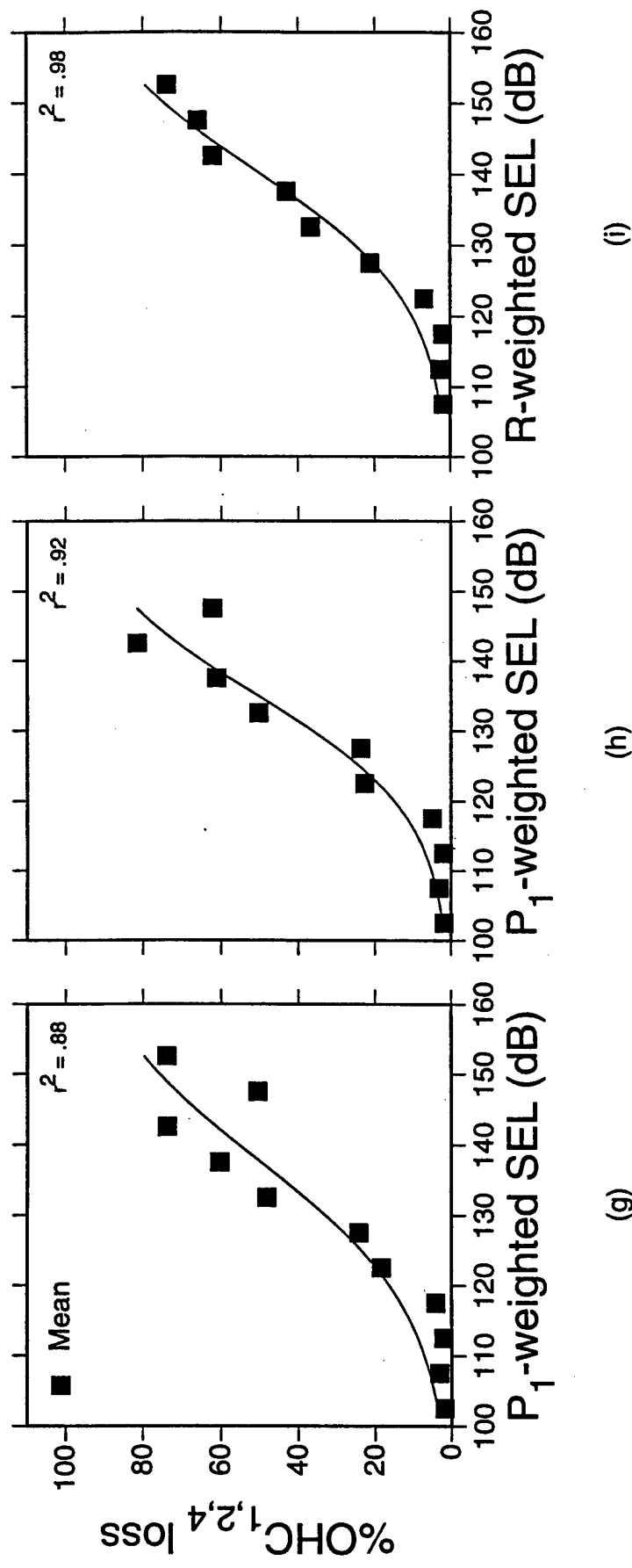
Figure 9 (g-i)   The mean percent OHC loss in the cochlea over octave-band lengths of the basilar membrane

centered at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for all

animals falling within 5 dB bins of the indicated level of the hazard index (g) P_1-weighted SEL, (h)

P_2-weighted SEL, and (i) R-weighted SEL.   The solid line is the nonlinear regression fit of Equation

(20) to the data.   The three parameters, A, B, and C of Equation (20) corresponding to each

regression line are listed in Table 2. (r^2 = coefficient of determination)
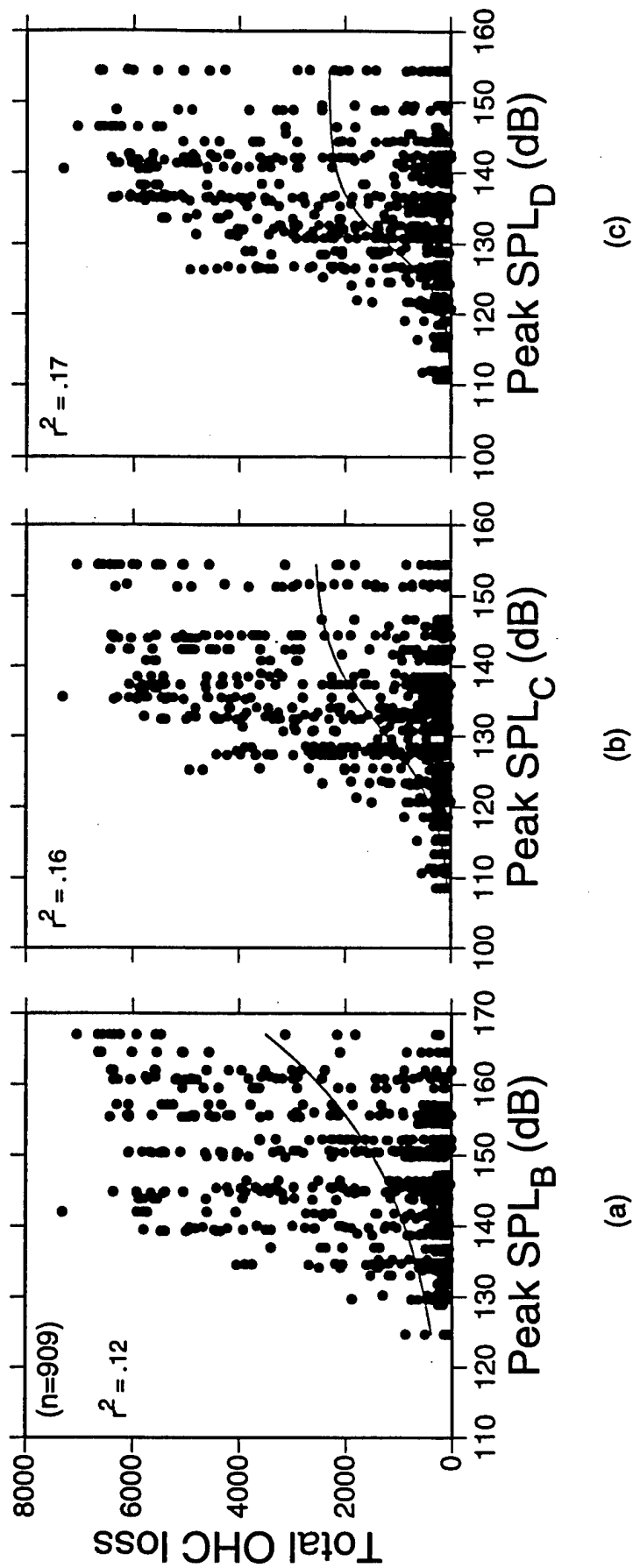
Figure 10 (a-c) Total OHC loss in the cochlea of each animal (n=909) exposed to the indicated level of the hazard

index (a) Peak SPL$_B$, (b) Peak SPL$_C$, and (c) Peak SPL$_D$. The solid line is the nonlinear regression fit

of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to

each regression line are listed in Table 3. (r^2 = coefficient of determination)

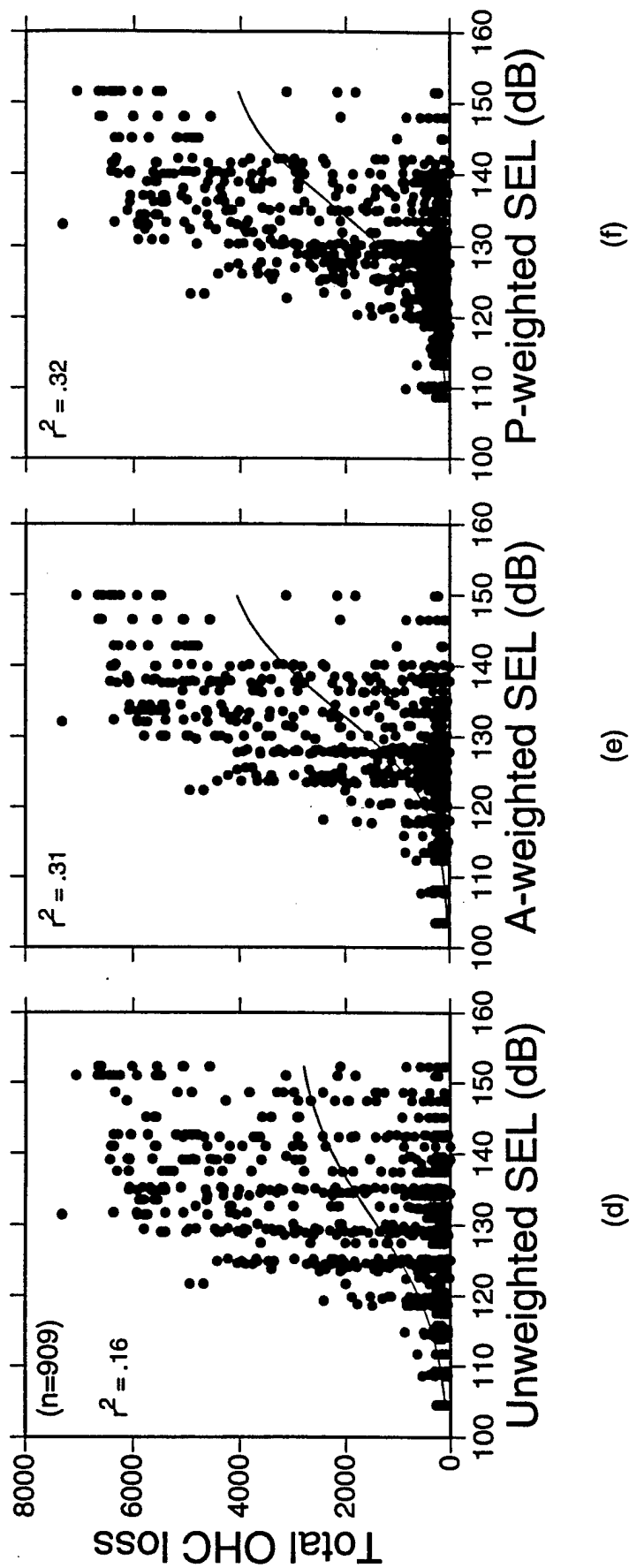Figure 10 (d-f)   Total OHC loss in the cochlea of each animal (n=909) exposed to the indicated level of the hazard

index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL. The solid line is the nonlinear

regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20)

corresponding to each regression line are listed in Table 3. (r^2 = coefficient of determination)
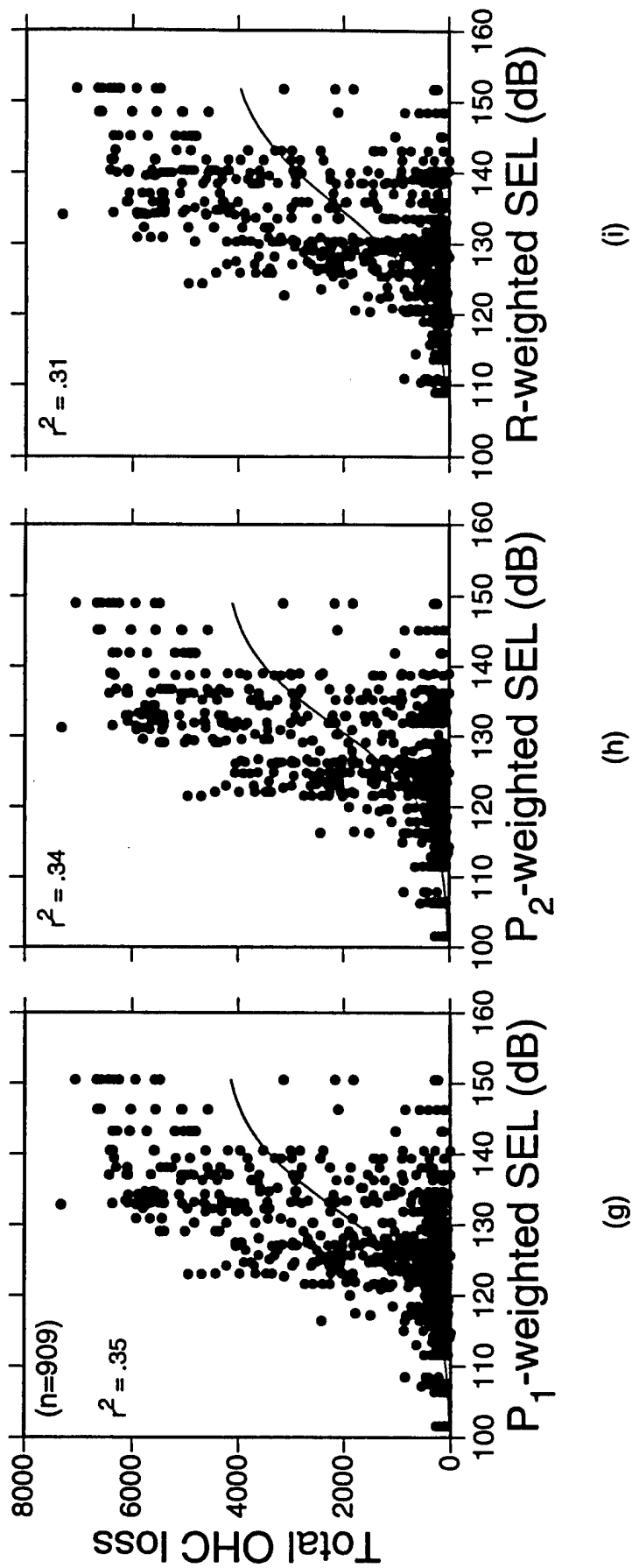
Figure 10 (g-i)   Total OHC loss in the cochlea of each animal (n=909) exposed to the indicated level of the hazard

index (g) P_1-weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL.   The solid line is the

nonlinear regression fit of Equation (20) to the data.   The three parameters, A, B, and C of Equation

(20) corresponding to each regression line are listed in Table 3. (r^2 = coefficient of determination)
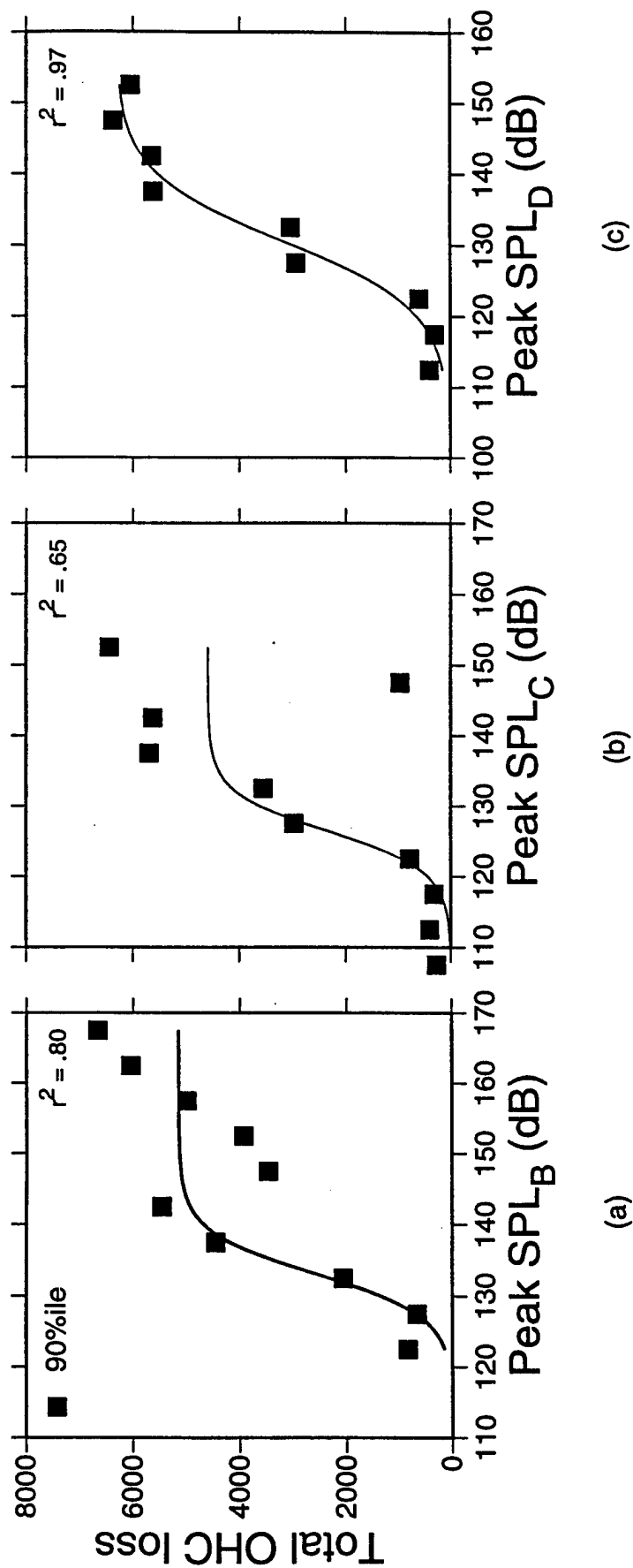
Figure 11 (a-c)   The 90th percentile total OHC loss for all animals falling within 5 dB bins of the indicated level of the hazard index (a) Peak SPL_B, (b) Peak SPL_C, and (c) Peak SPL_D. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 3. (r^2 = coefficient of determination)
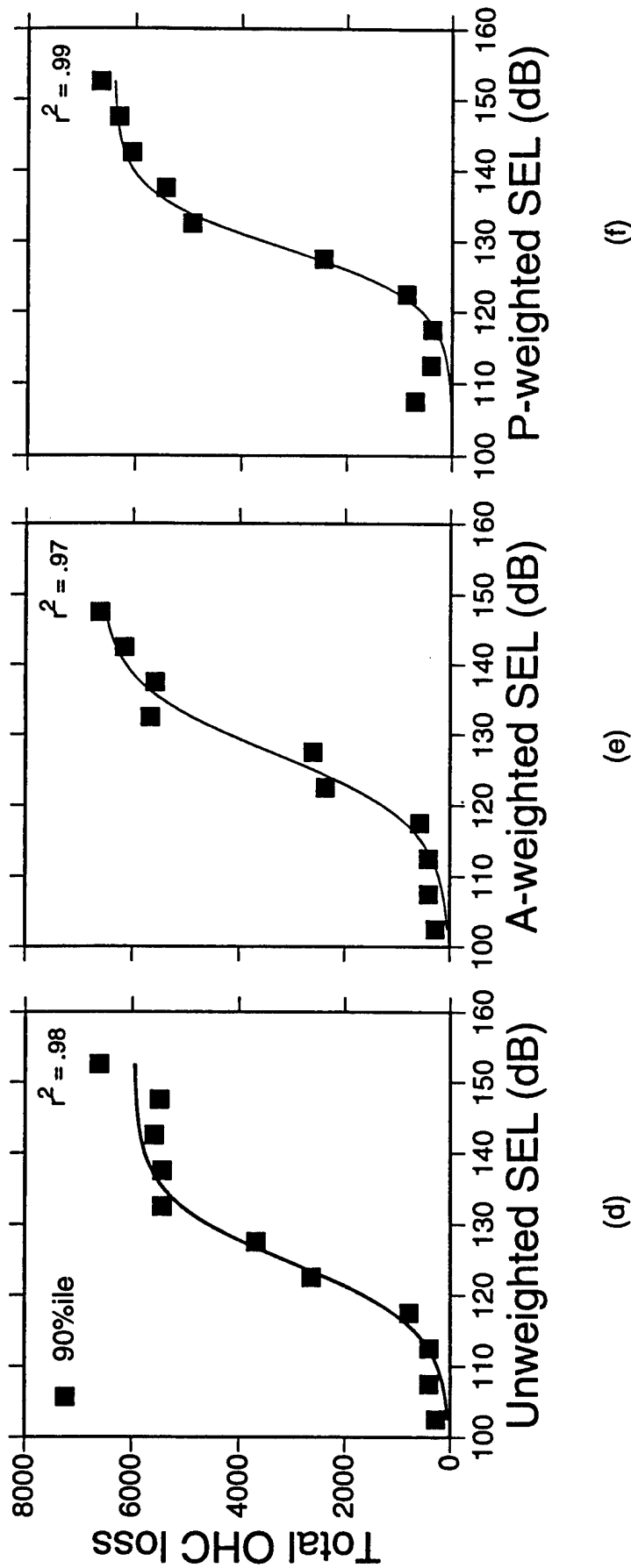
Figure 11 (d-f)   The 90th percentile total OHC loss for all animals falling within 5 dB bins of the indicated level of the hazard index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 3. (r^2 = coefficient of determination)
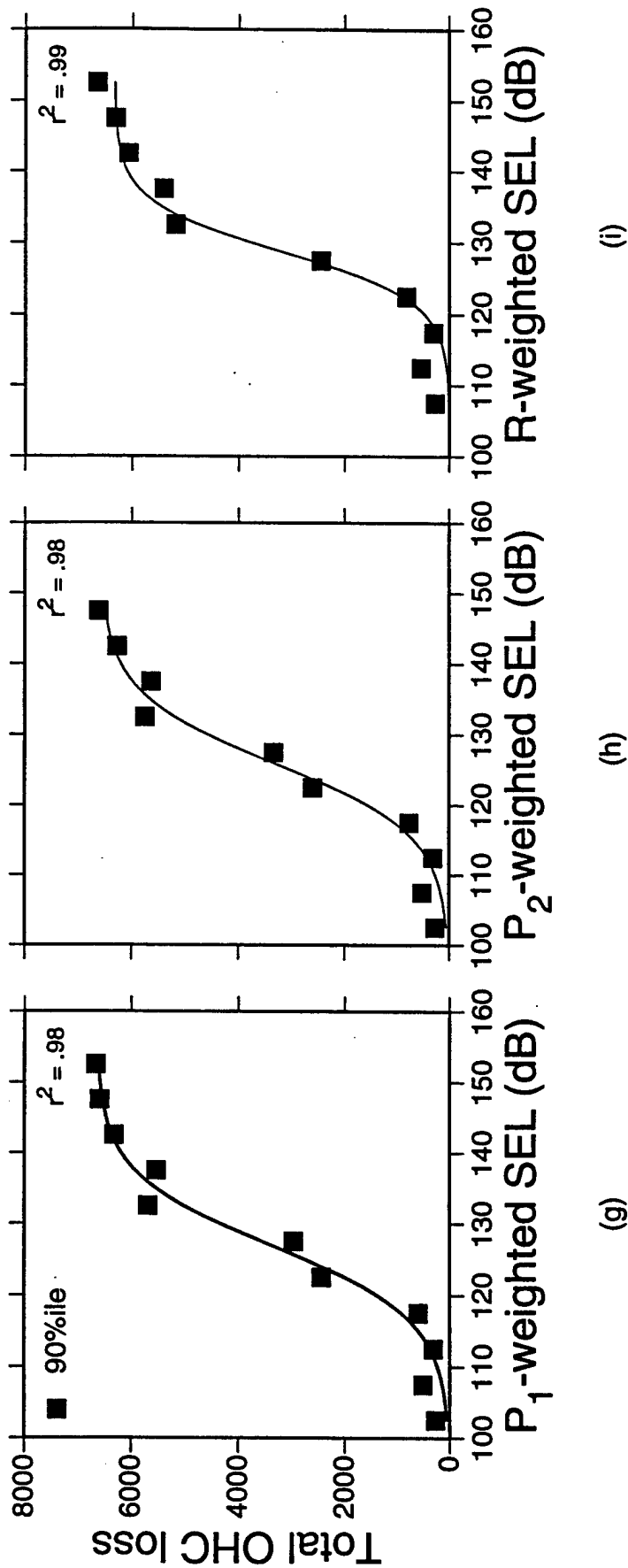
Figure 11 (g-i) The 90th percentile total OHC loss for all animals falling within 5 dB bins of the indicated level of the hazard index (g) P_1-weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 3. (r^2 = coefficient of determination)
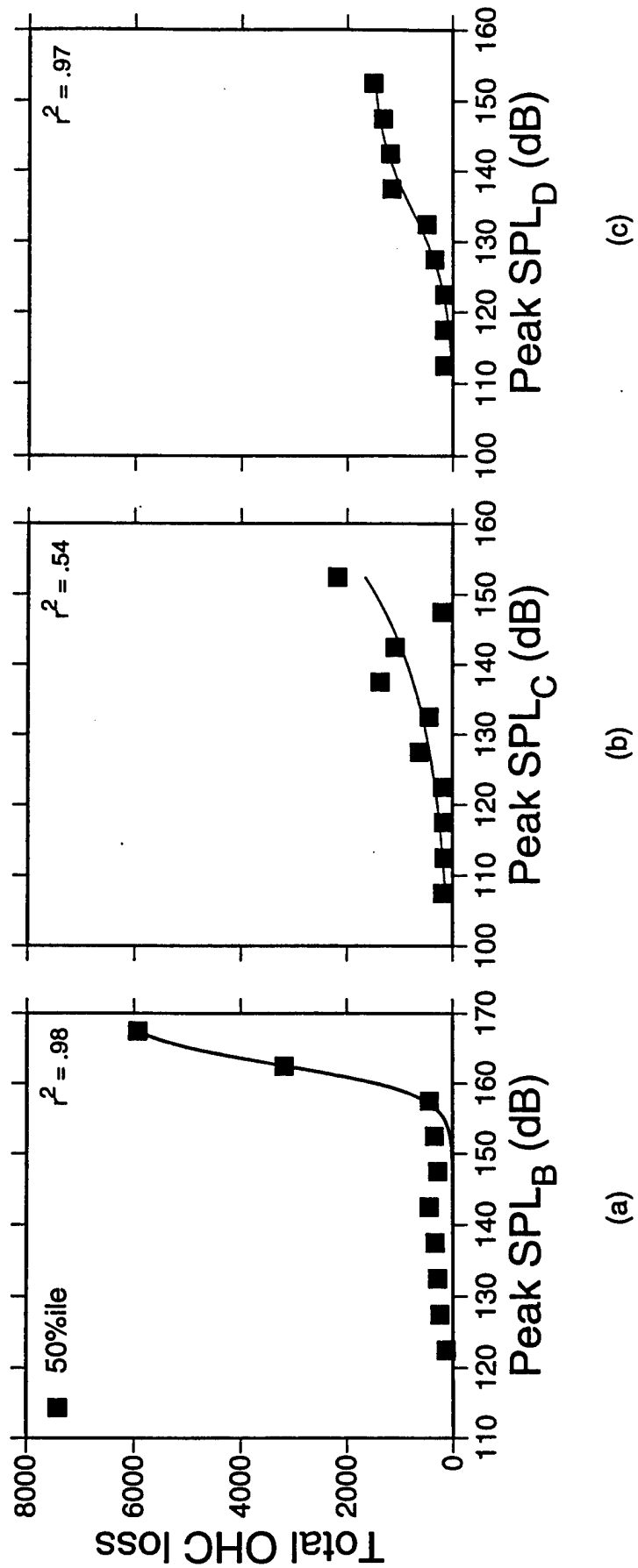
Figure 12 (a-c)   The 50th percentile total OHC loss for all animals falling within 5 dB bins of the indicated level of the hazard index (a) Peak SPL_B, (b) Peak SPL_C, and (c) Peak SPL_D. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 3. (r^2 = coefficient of determination)
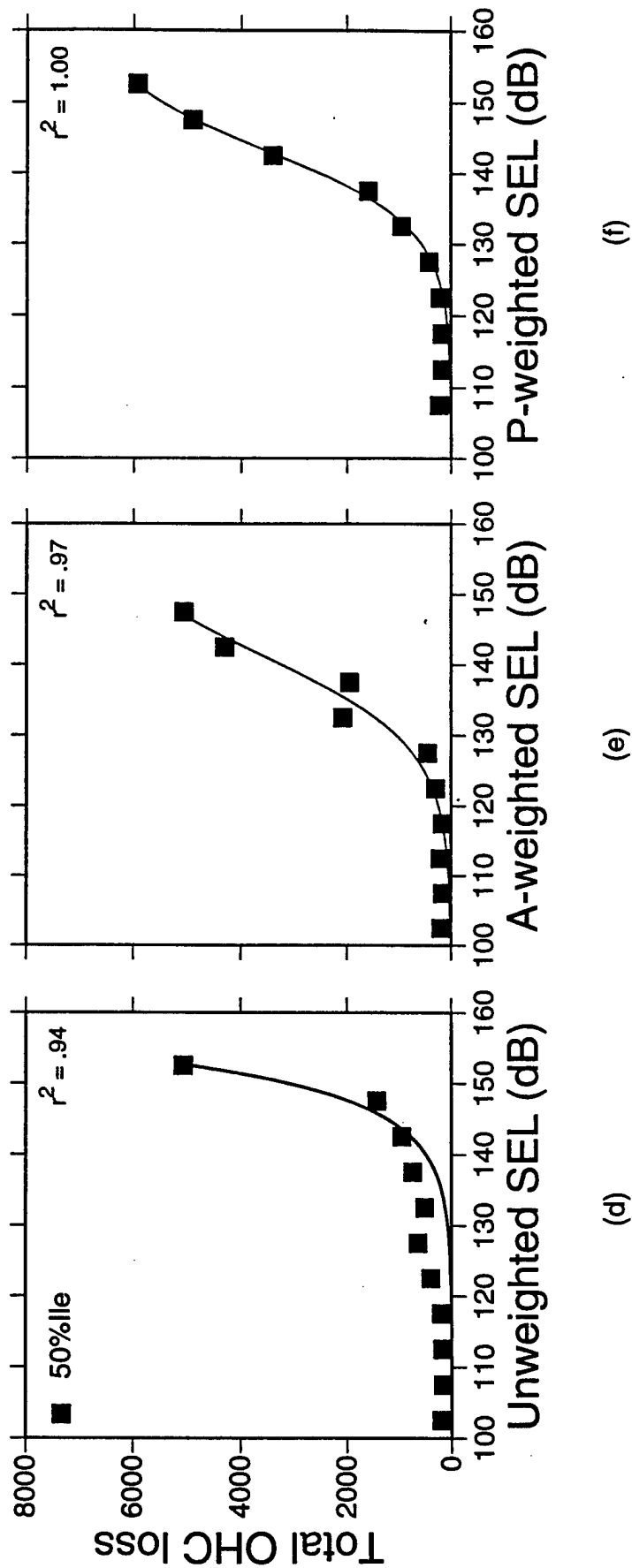
Figure 12 (d-f)   The 50th percentile total OHC loss for all animals falling within 5 dB bins of the indicated level of the

hazard index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL.   The solid line is the

nonlinear regression fit of Equation (20) to the data.   The three parameters, A, B, and C of Equation

(20) corresponding to each regression line are listed in Table 3. (r^2 = coefficient of determination)
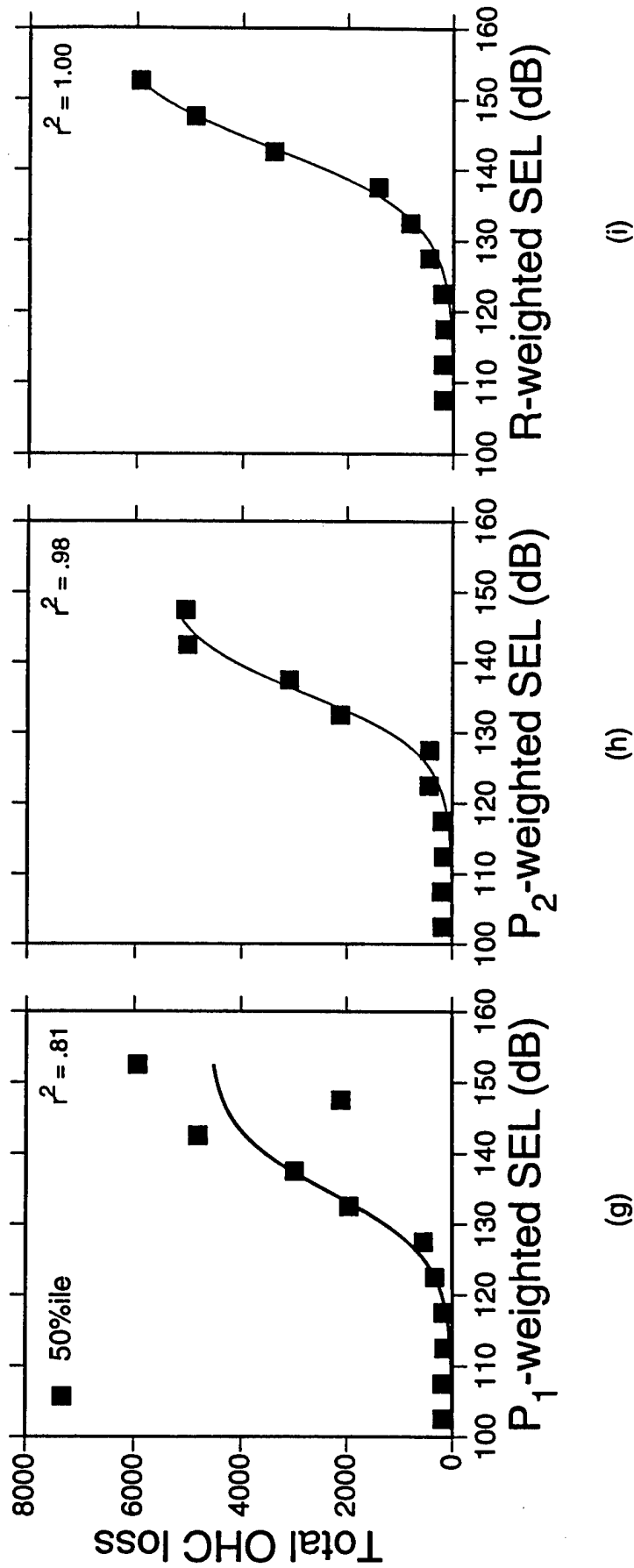
Figure 12 (g-i)   The 50th percentile total OHC loss for all animals falling within 5 dB bins of the indicated level of the hazard index (g) P_1-weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 3. (r^2 = coefficient of determination)
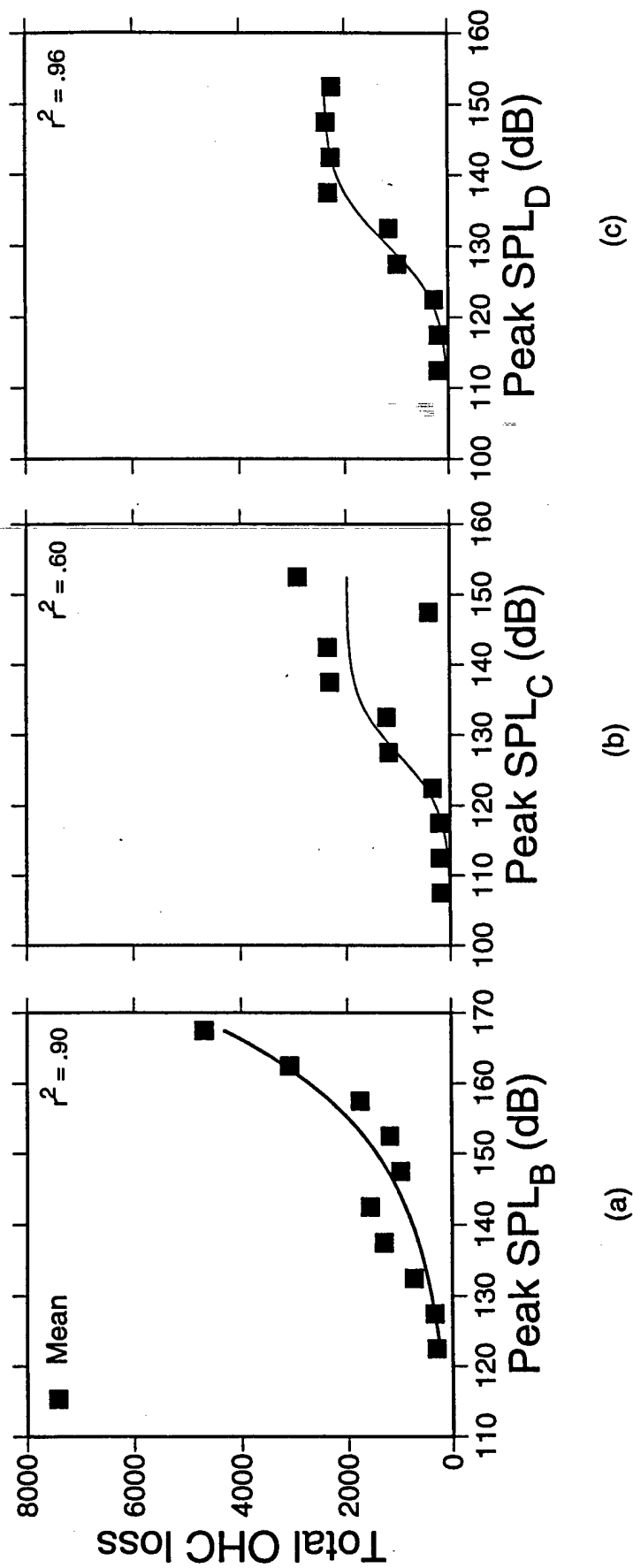
Figure 13 (a-c) The mean total OHC loss for all animals falling within 5 dB bins of the indicated level of the hazard

index (a) Peak SPL_B, (b) Peak SPL_C, and (c) Peak SPL_D. The solid line is the nonlinear regression fit

of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to

each regression line are listed in Table 3. (r^2 = coefficient of determination)
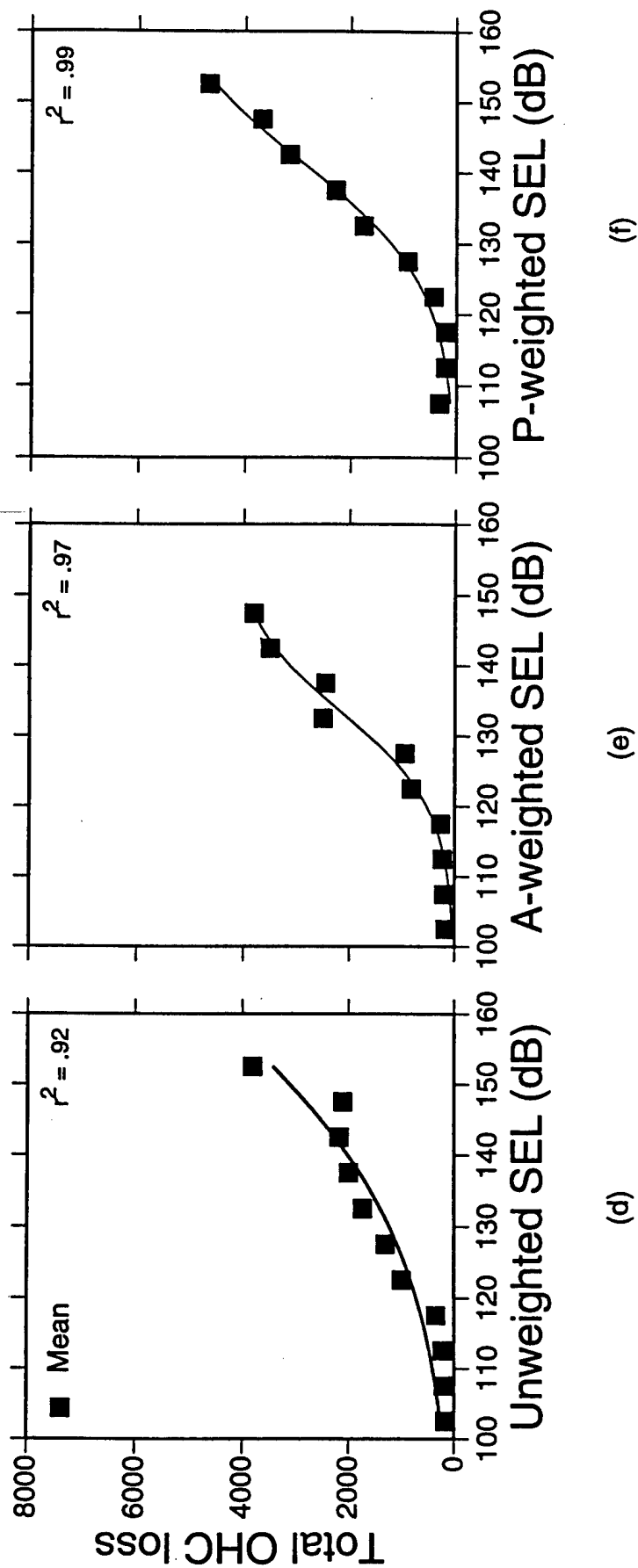
Figure 13 (d-f)   The mean total OHC loss for all animals falling within 5 dB bins of the indicated level of the hazard

index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL. The solid line is the nonlinear

regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20)

corresponding to each regression line are listed in Table 3. (r^2 = coefficient of determination)
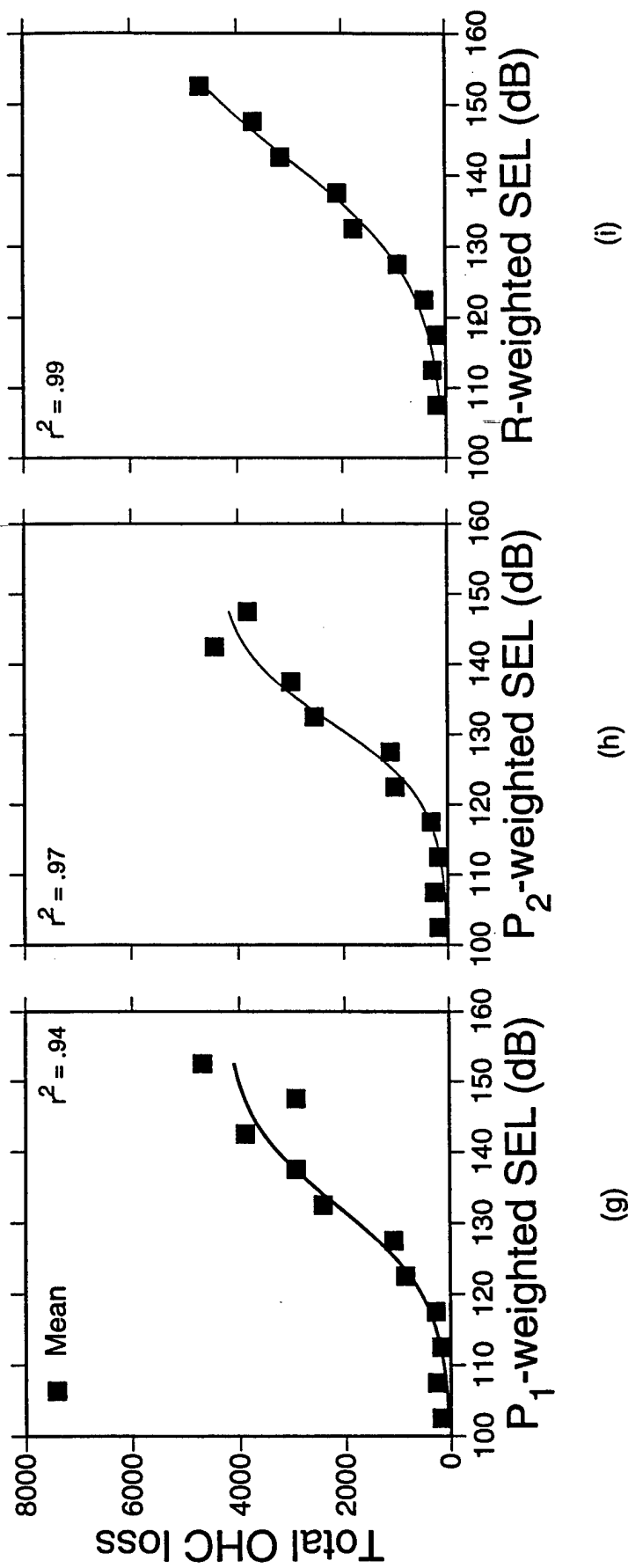
Figure 13 (g-i)   The mean total OHC loss for all animals falling within 5 dB bins of the indicated level of the hazard

index (g) P_1-weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL.   The solid line is the

nonlinear regression fit of Equation (20) to the data.   The three parameters, A, B, and C of Equation

(20) corresponding to each regression line are listed in Table 3. (r^2 = coefficient of determination)
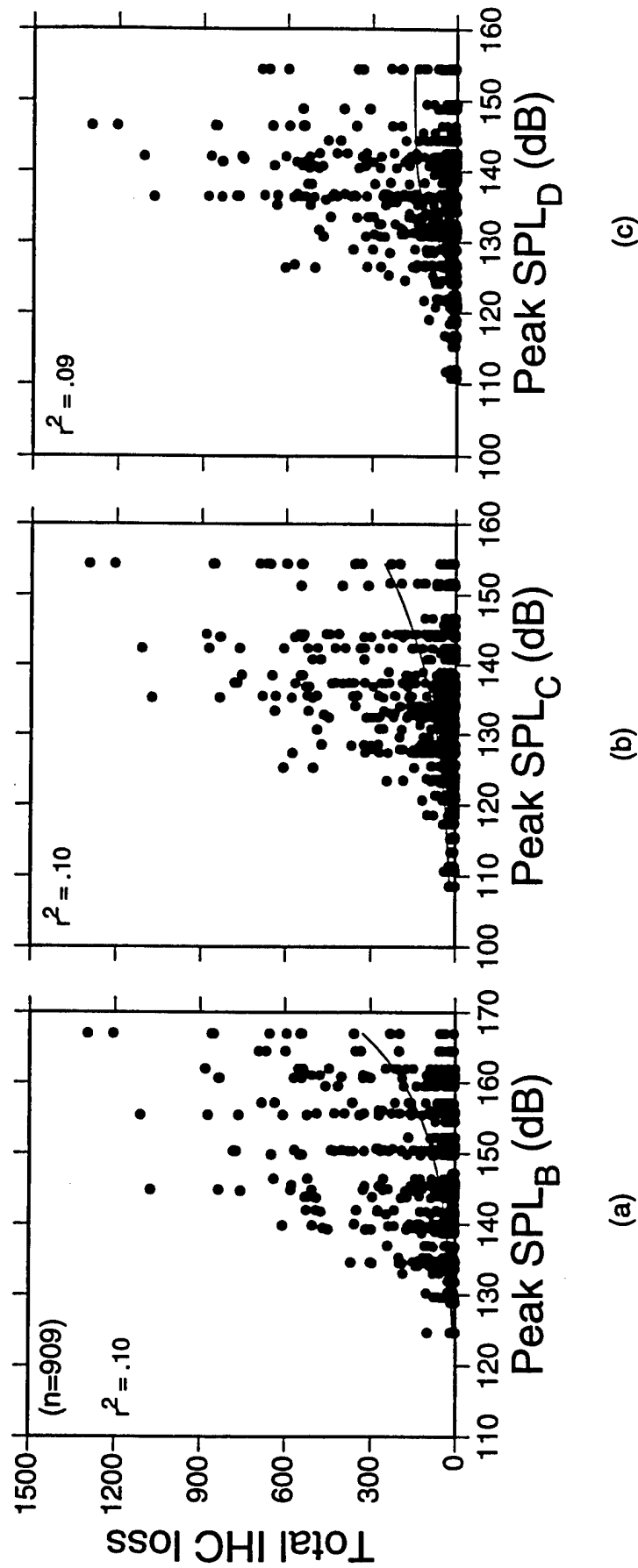
Figure 14 (a-c)   Total IHC loss in the cochlea of each animal (n=909) exposed to the indicated level of the hazard index

(a) Peak SPL$_B$, (b) Peak SPL$_C$, and (c) Peak SPL$_D$. The solid line is the nonlinear regression fit of

Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each

regression line are listed in Table 4. (r^2 = coefficient of determination)
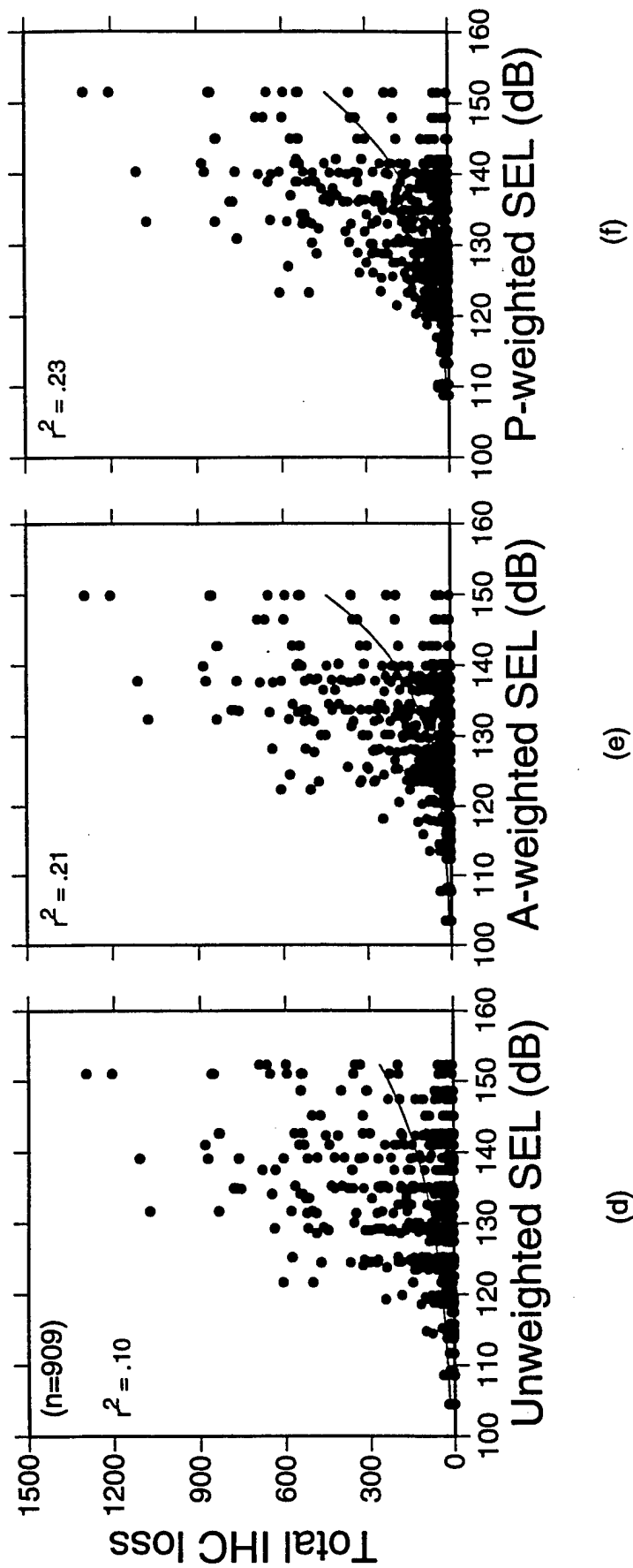
Figure 14 (d-f)   Total IHC loss in the cochlea of each animal (n=909) exposed to the indicated level of the hazard index

(d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL.   The solid line is the nonlinear

regression fit of Equation (20) to the data.   The three parameters, A, B, and C of Equation (20)

corresponding to each regression line are listed in Table 4. (r^2 = coefficient of determination)
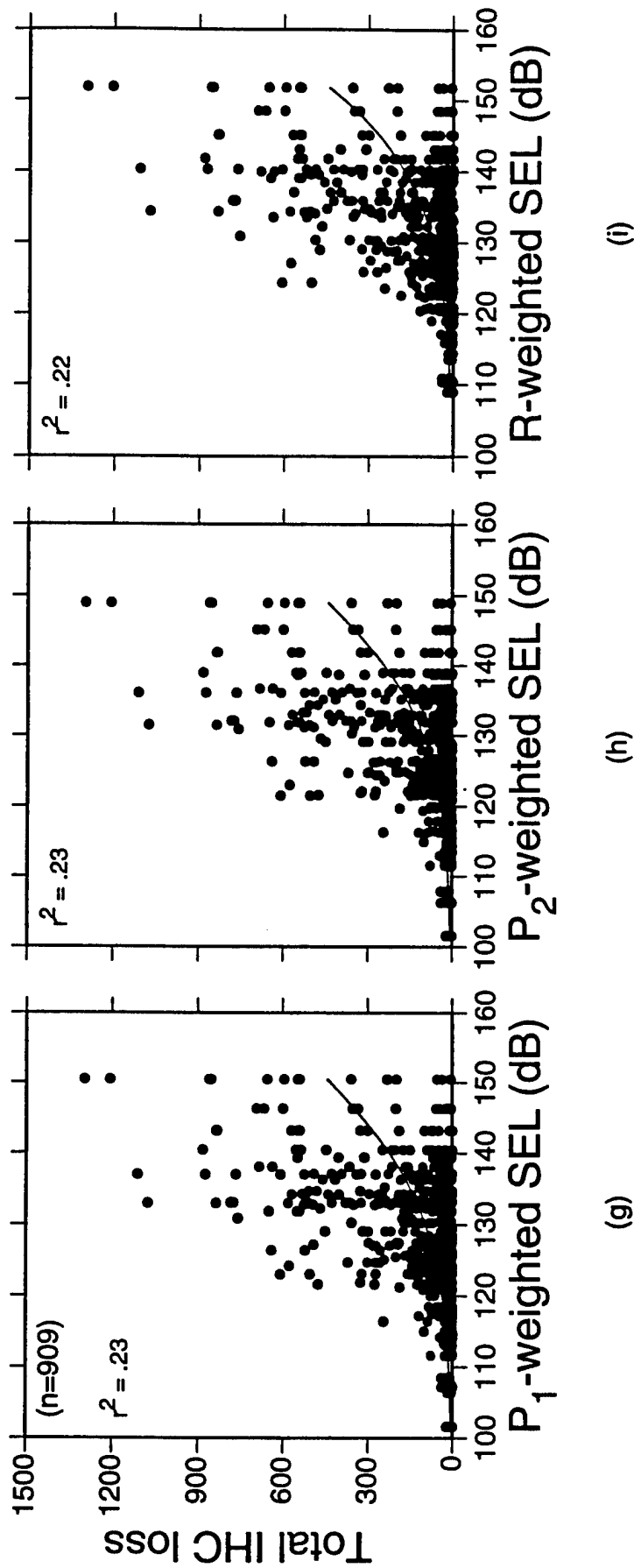
Figure 14 (g-i)   Total IHC loss in the cochlea of each animal (n=909) exposed to the indicated level of the hazard index

(g) P_1-weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL. The solid line is the nonlinear

regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20)

corresponding to each regression line are listed in Table 4. (r^2 = coefficient of determination)
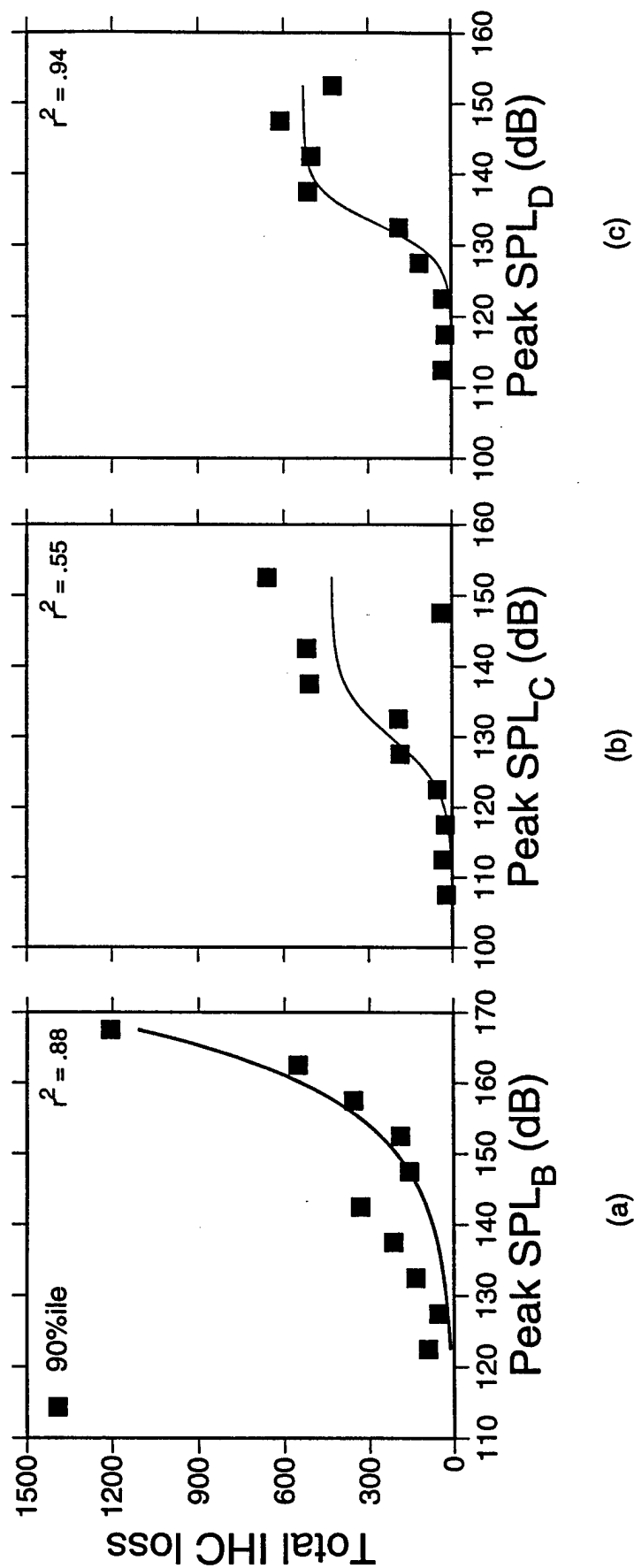
Figure 15 (a-c) The 90th percentile total IHC loss for all animals falling within 5 dB bins of the indicated level of the hazard index (a) Peak SPL_B, (b) Peak SPL_C, and (c) Peak SPL_D. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 4. (r^2 = coefficient of determination)
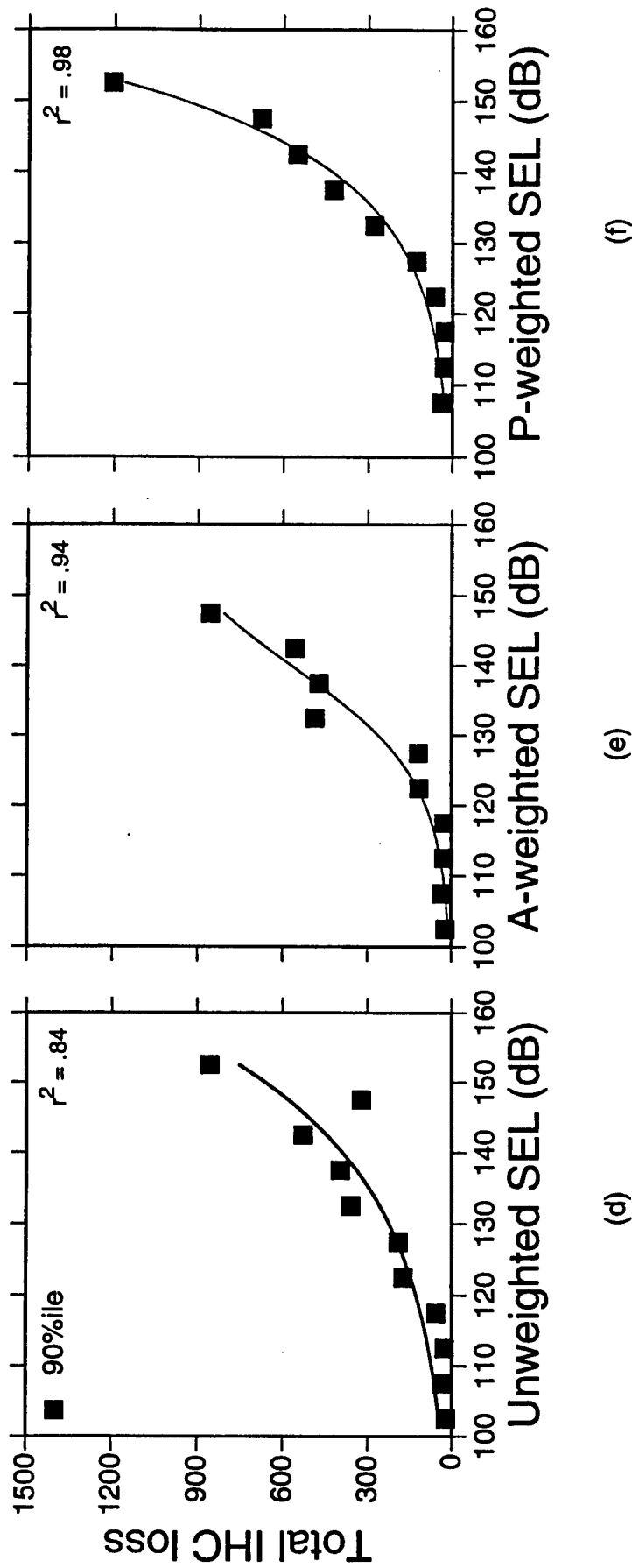
Figure 15 (d-f)   The 90th percentile total IHC loss for all animals falling within 5 dB bins of the indicated level of the

hazard index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL. The solid line is the

nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation

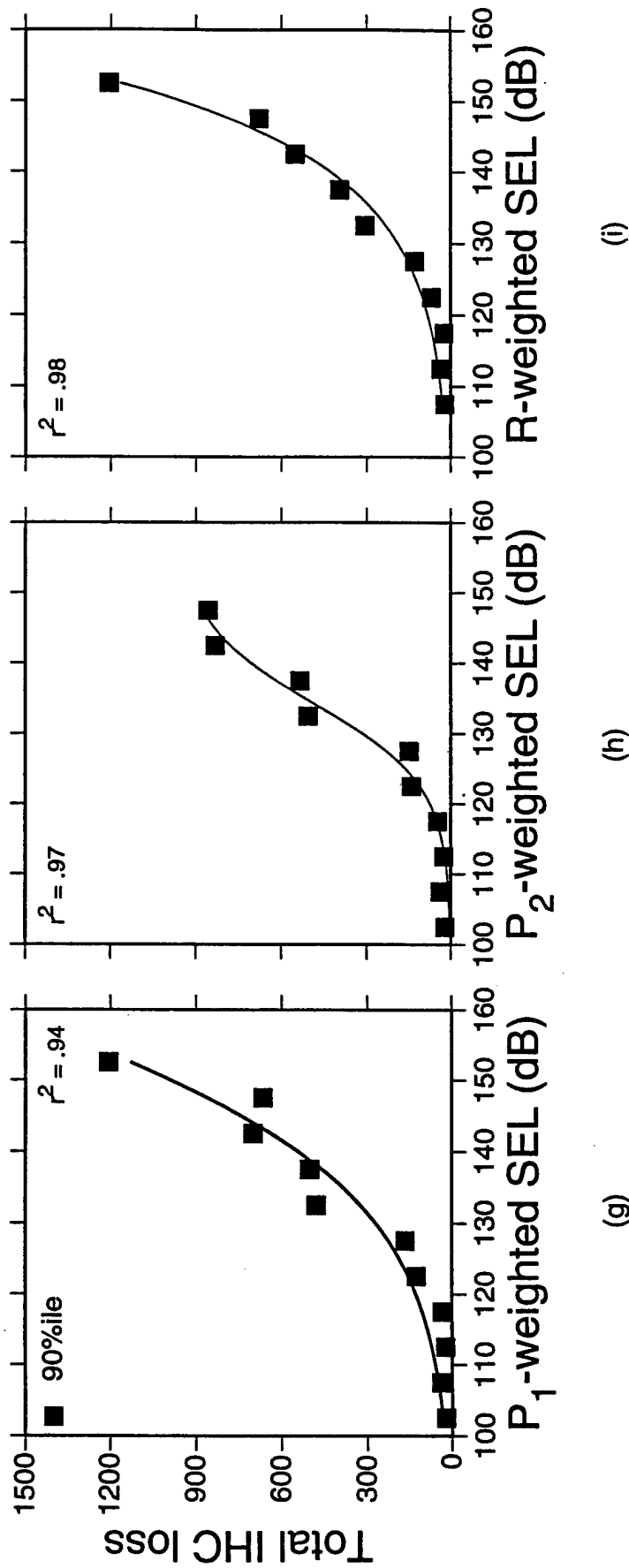(20) corresponding to each regression line are listed in Table 4. (r^2 = coefficient of determination)

Figure 15 (g-i) The 90th percentile total IHC loss for all animals falling within 5 dB bins of the indicated level of the hazard index (g) P_1-weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 4. (r^2 = coefficient of determination)
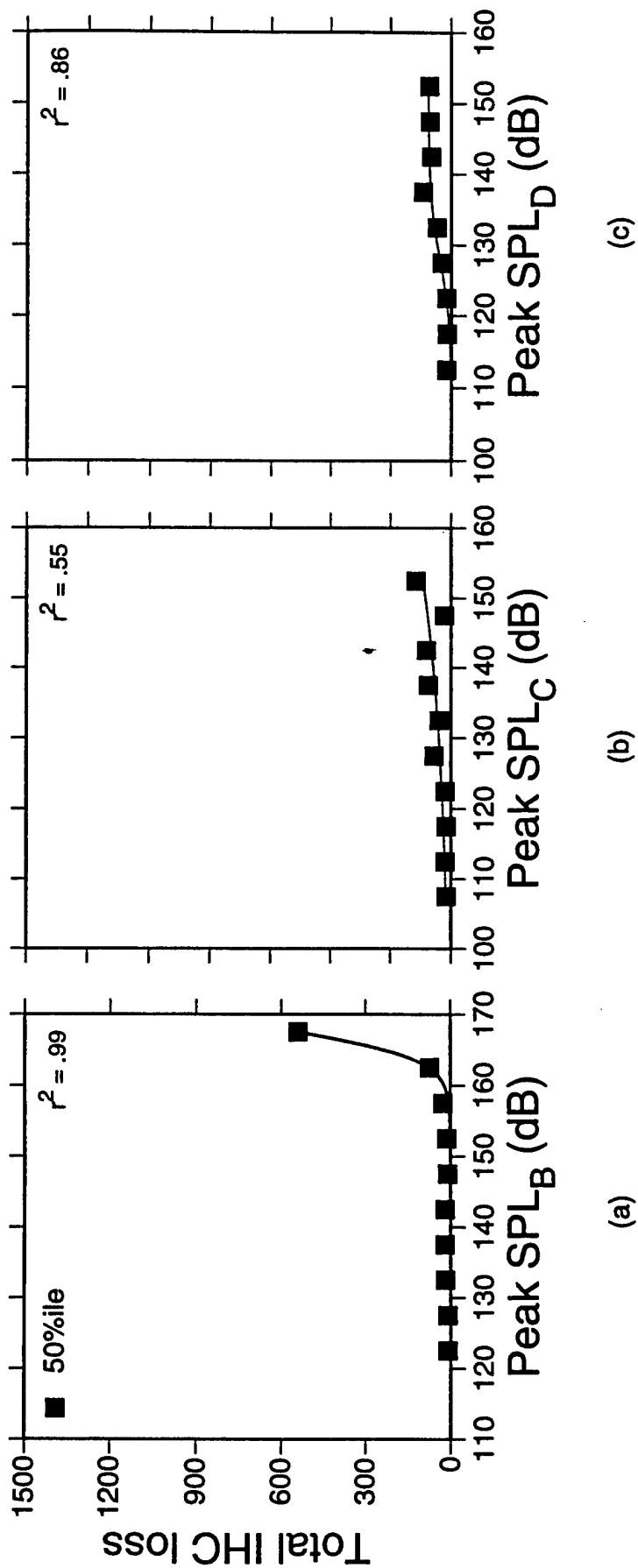
Figure 16 (a-c)   The 50th percentile total IHC loss for all animals falling within 5 dB bins of the indicated level of the hazard index (a) Peak SPL$_B$, (b) Peak SPL$_C$, and (c) Peak SPL$_D$.   The solid line is the nonlinear regression fit of Equation (20) to the data.   The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 4. (r^2 = coefficient of determination)
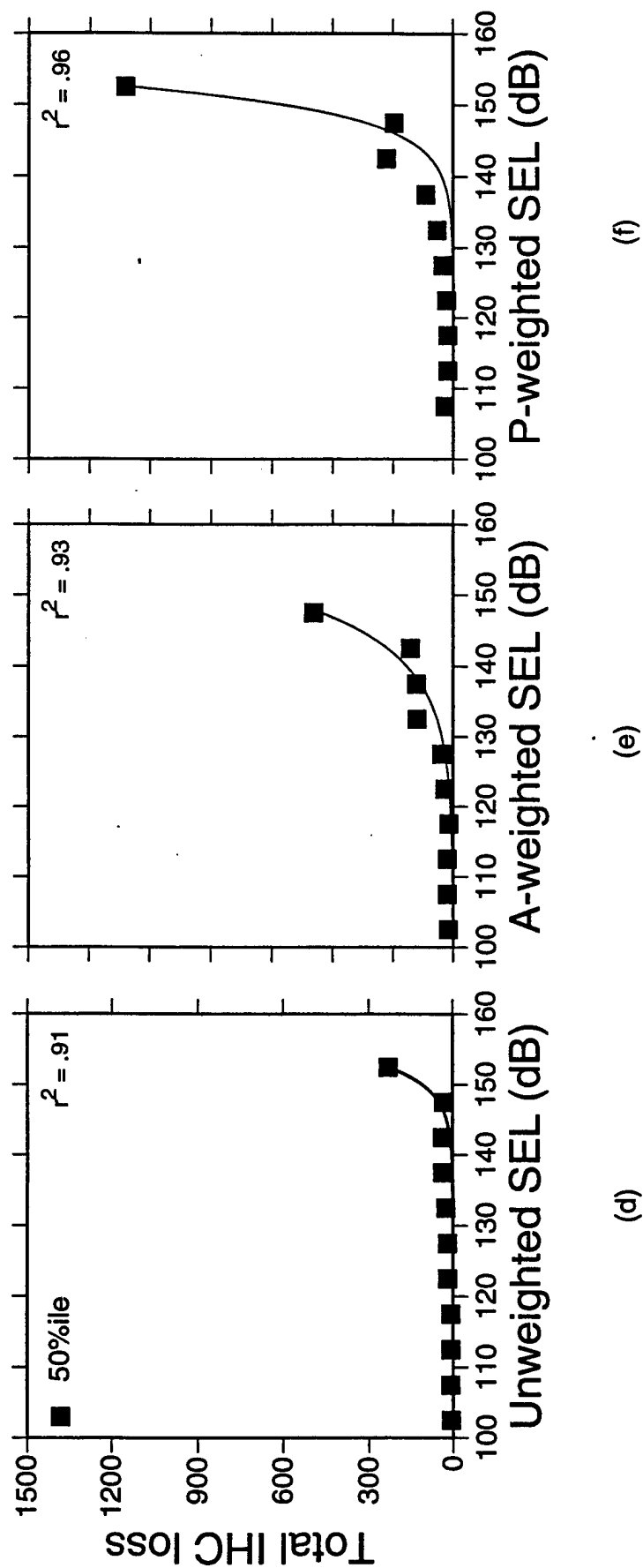
Figure 16 (d-f)   The 50th percentile total IHC loss for all animals falling within 5 dB bins of the indicated level of the hazard index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 4. (r^2 = coefficient of determination)
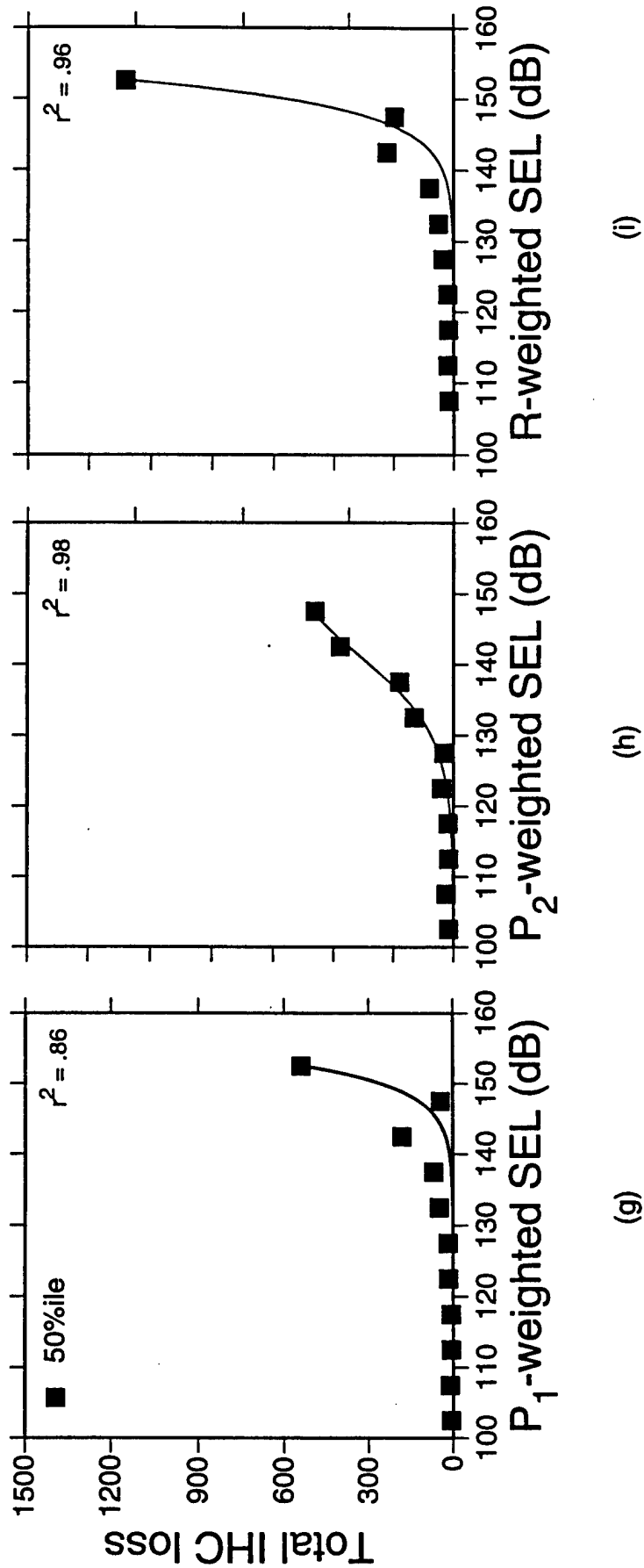
Figure 16 (g-i)   The 50th percentile total IHC loss for all animals falling within 5 dB bins of the indicated level of the

hazard index (g) P_1-weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL. The solid line is the

nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation

(20) corresponding to each regression line are listed in Table 4. (r^2 = coefficient of determination)
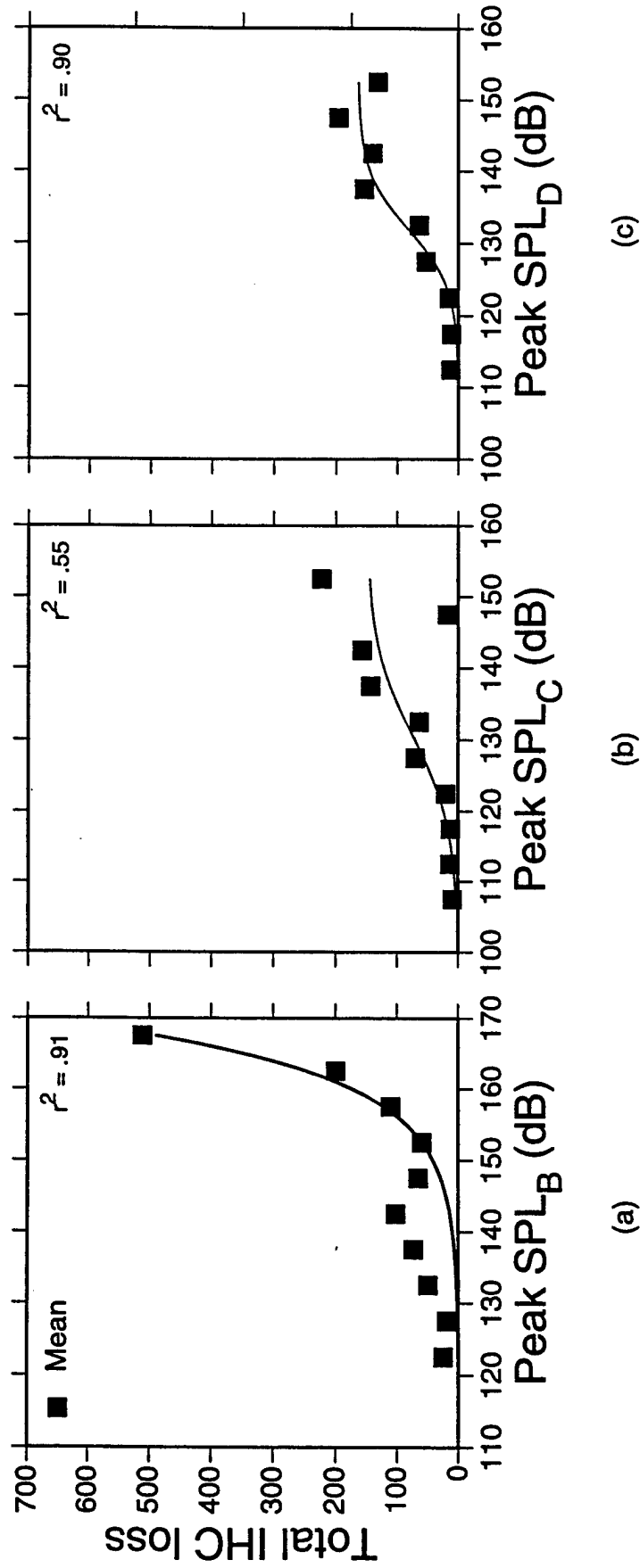
Figure 17 (a-c)   The mean total IHC loss for all animals falling within 5 dB bins of the indicated level of the hazard index

(a) Peak SPL$_B$, (b) Peak SPL$_C$, and (c) Peak SPL$_D$.   The solid line is the nonlinear regression fit of

Equation (20) to the data.   The three parameters, A, B, and C of Equation (20) corresponding to each

regression line are listed in Table 4. (r^2 = coefficient of determination)
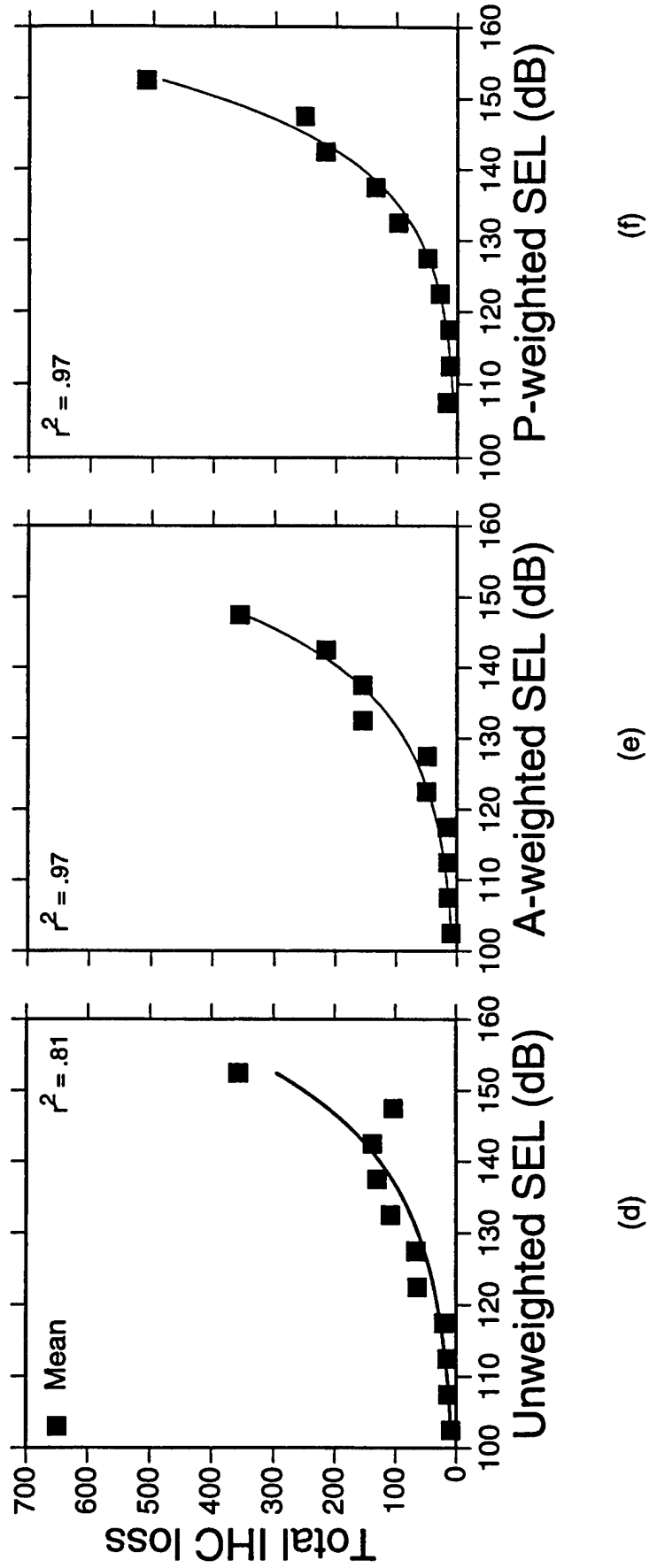
Figure 17 (d-f)   The mean total IHC loss for all animals falling within 5 dB bins of the indicated level of the hazard index

(d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL. The solid line is the nonlinear

regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20)

corresponding to each regression line are listed in Table 4. (r^2 = coefficient of determination)
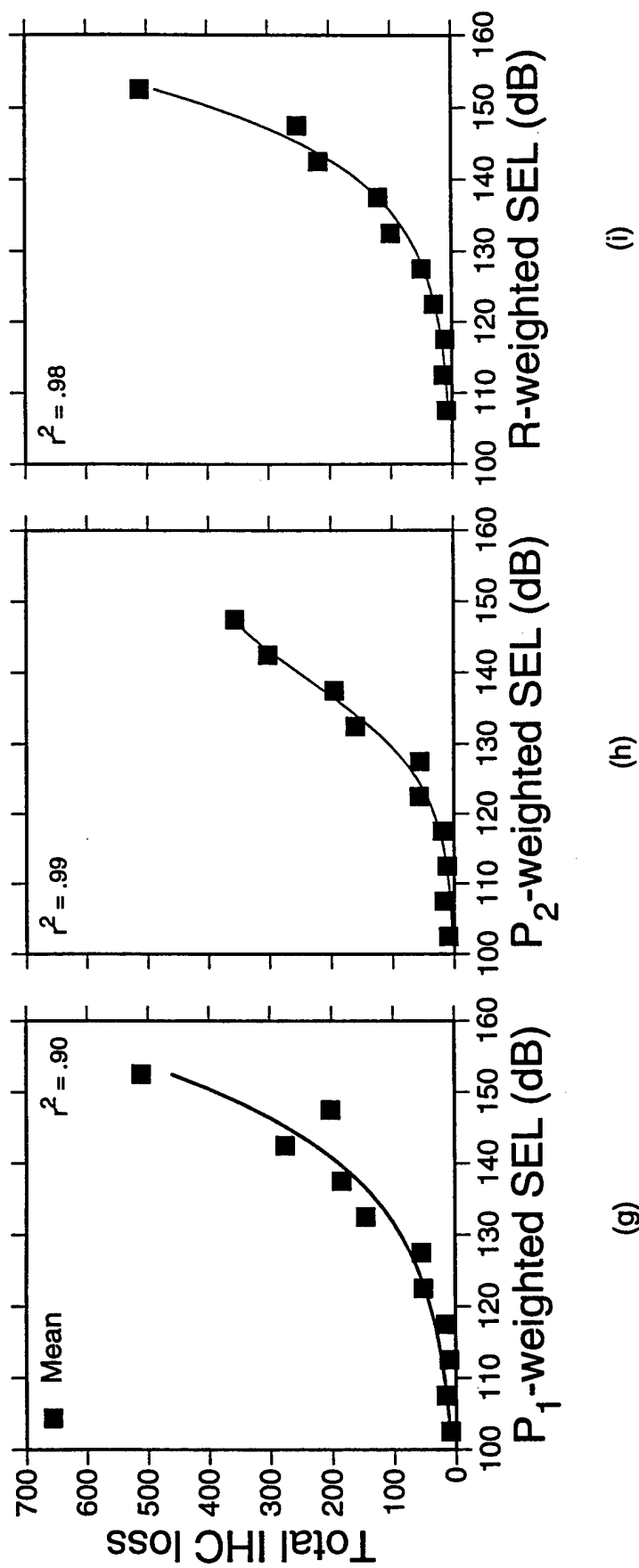
Figure 17 (g-i) The mean total IHC loss for all animals falling within 5 dB bins of the indicated level of the hazard index

(g) P_1-weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL. The solid line is the nonlinear

regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20)

corresponding to each regression line are listed in Table 4. (r^2 = coefficient of determination)
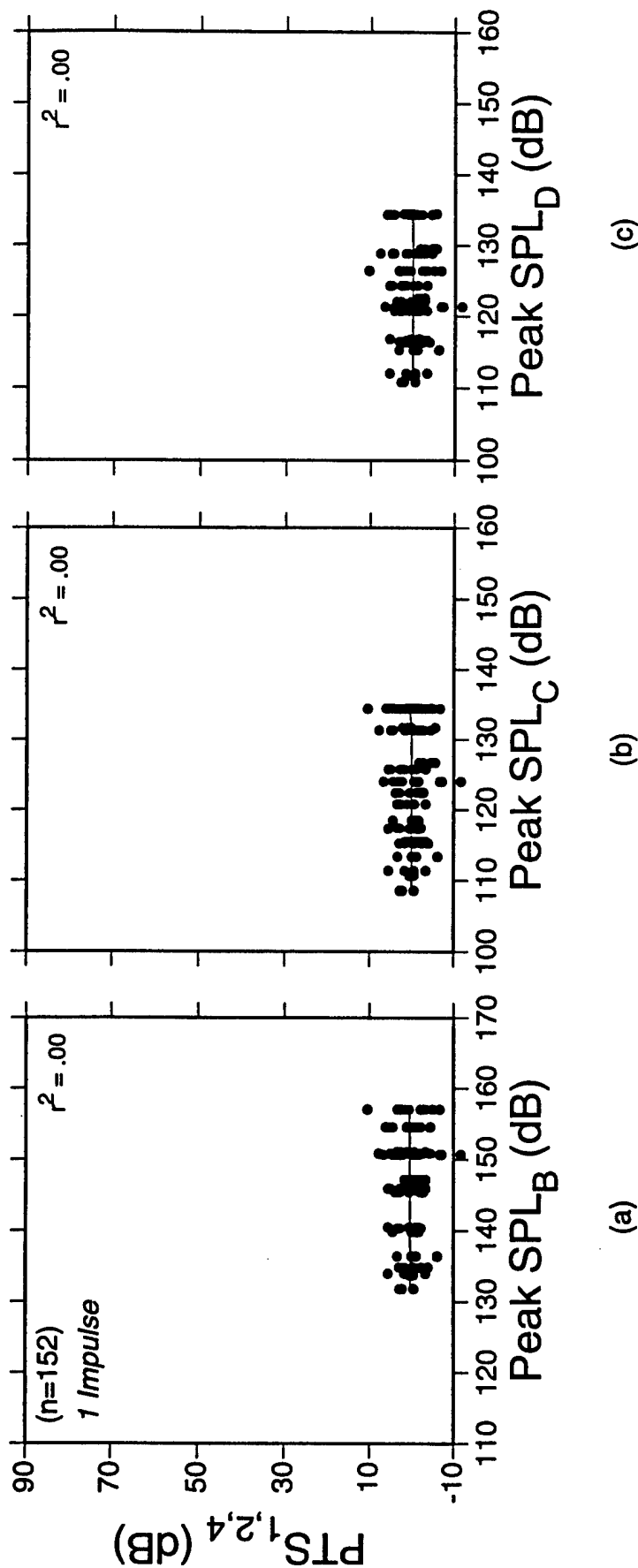
Figure 18 (a-c) Average PTS measured at the 1, 2, and 4 kHz test frequencies of each animal (n=152) exposed to

a single impulse at the indicated level of the hazard index (a) Peak SPL_B, (b) Peak SPL_C, and (c)

Peak SPL_D. The solid line is the nonlinear regression fit of Equation (20) to the data. The three

parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table
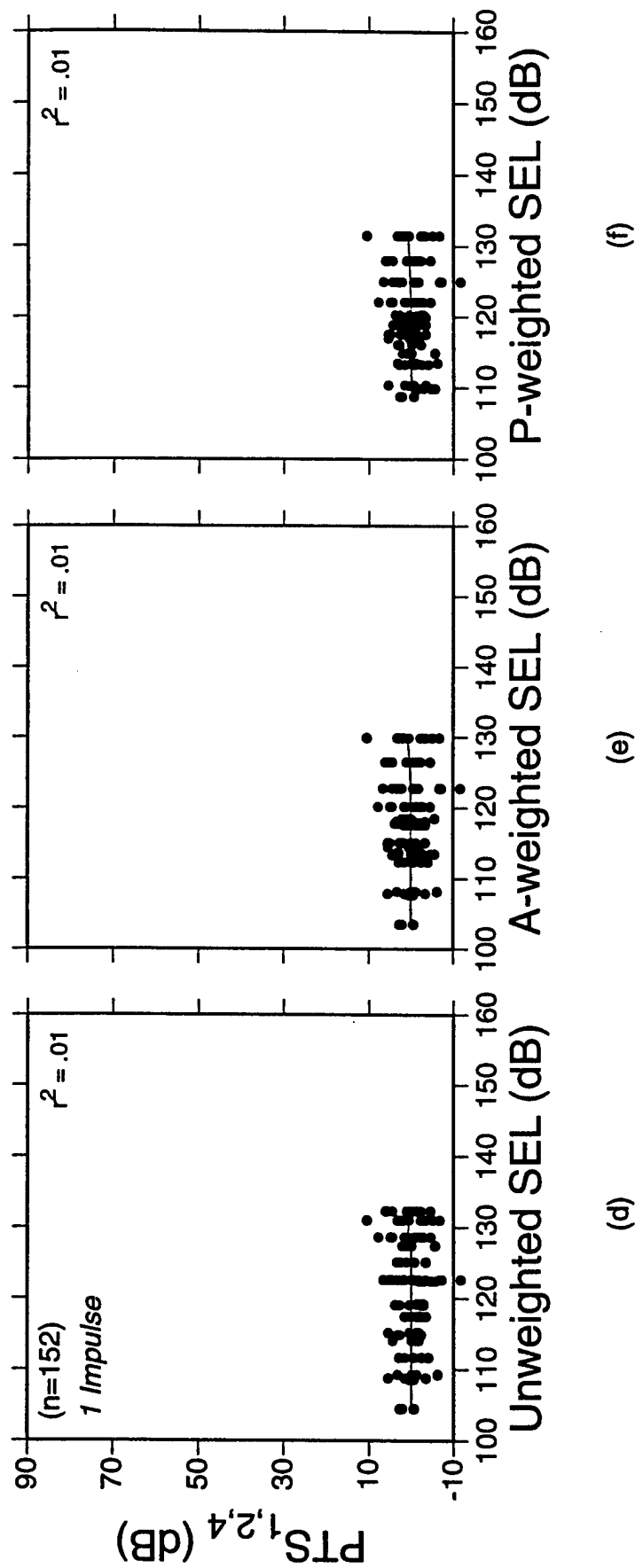
5. (r^2 = coefficient of determination)

Figure 18 (d-f)   Average PTS measured at the 1, 2, and 4 kHz test frequencies of each animal (n=152) exposed to

a single impulse at the indicated level of the hazard index (d) Unweighted SEL, (e) A-weighted

SEL, and (f) P-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the

data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line

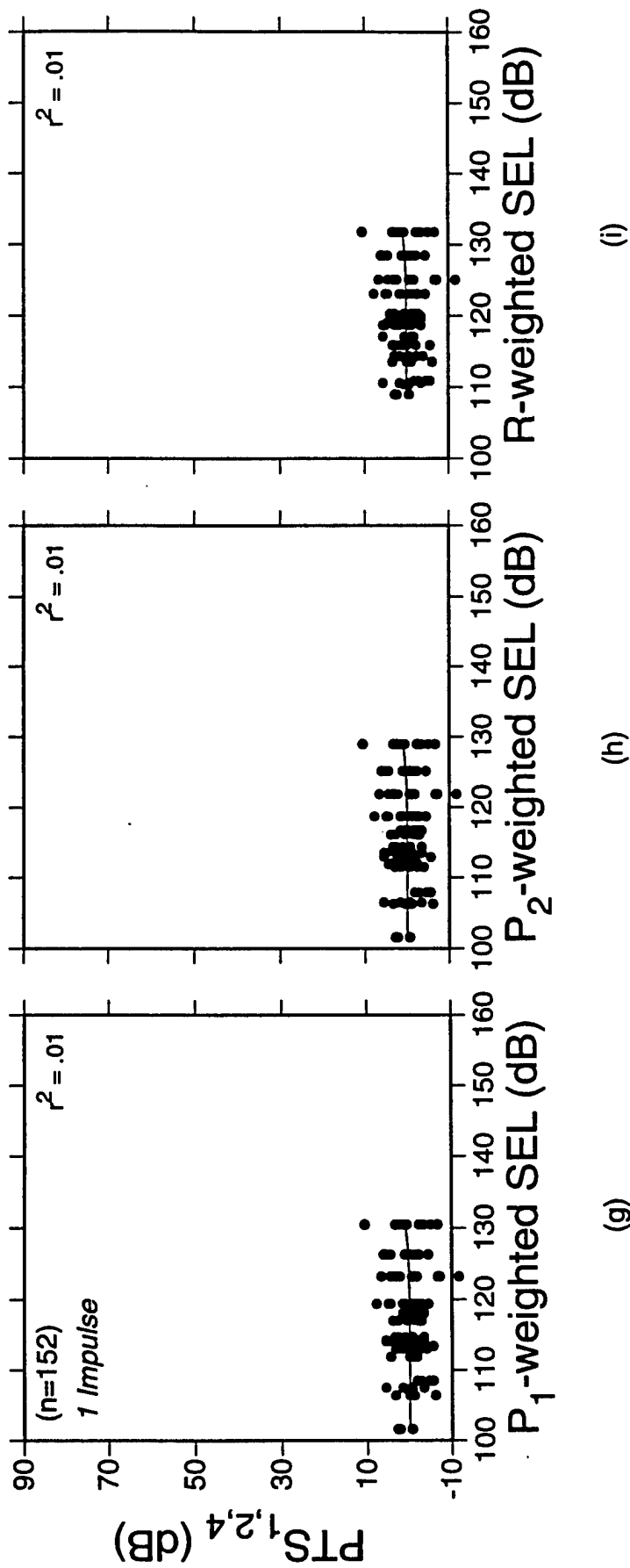are listed in Table 5. (r^2 = coefficient of determination)

Figure 18 (g–i)   Average PTS measured at the 1, 2, and 4 kHz test frequencies of each animal (n=152) exposed to

a single impulse at the indicated level of the hazard index (g) P_1-weighted SEL, (h) P_2-weighted

SEL, and (i) R-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the

data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line

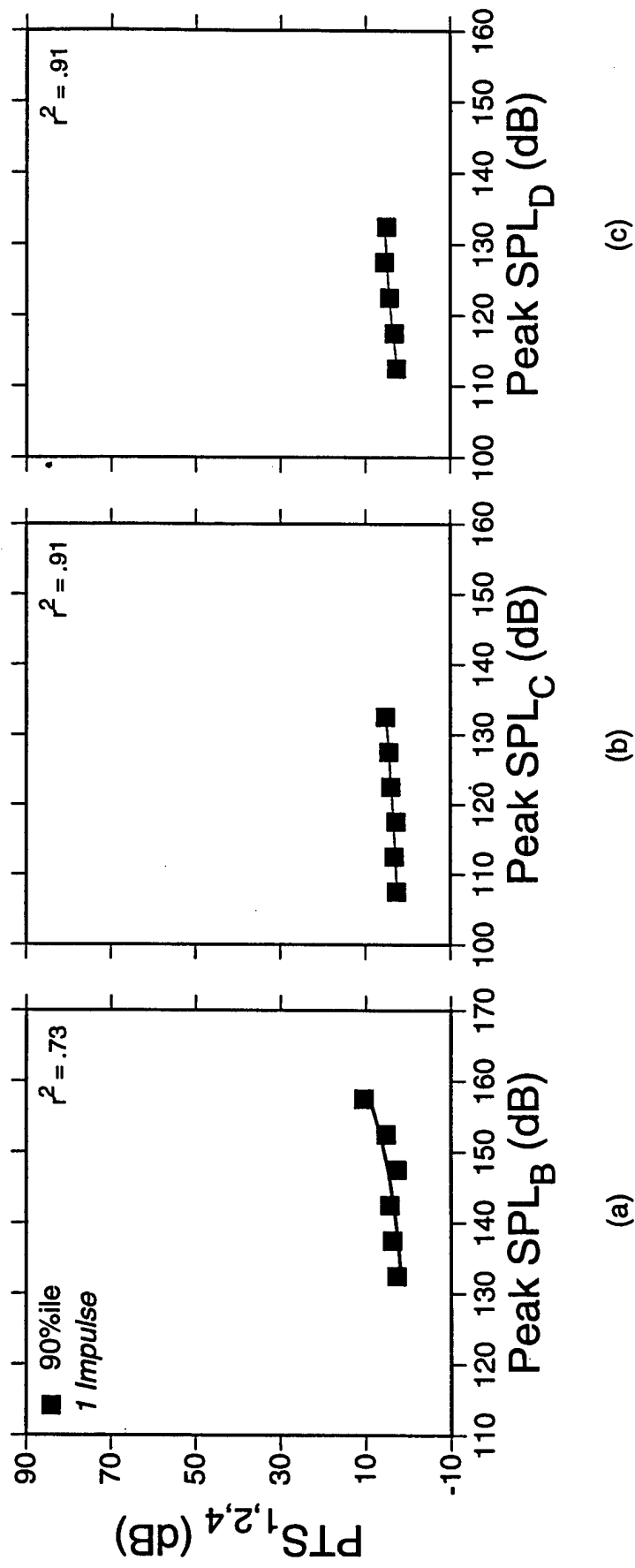are listed in Table 1. (r^2 = coefficient of determination)

Figure 19 (a-c)   The 90th percentile average PTS measured at the 1, 2, and 4 kHz test frequencies for all animals exposed to a single impulse falling within 5 dB bins of the indicated level of the hazard index (a) Peak SPL_B, (b) Peak SPL_C, and (c) Peak SPL_D.   The solid line is the nonlinear regression fit of Equation (20) to the data.   The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 5. (r^2 = coefficient of determination)
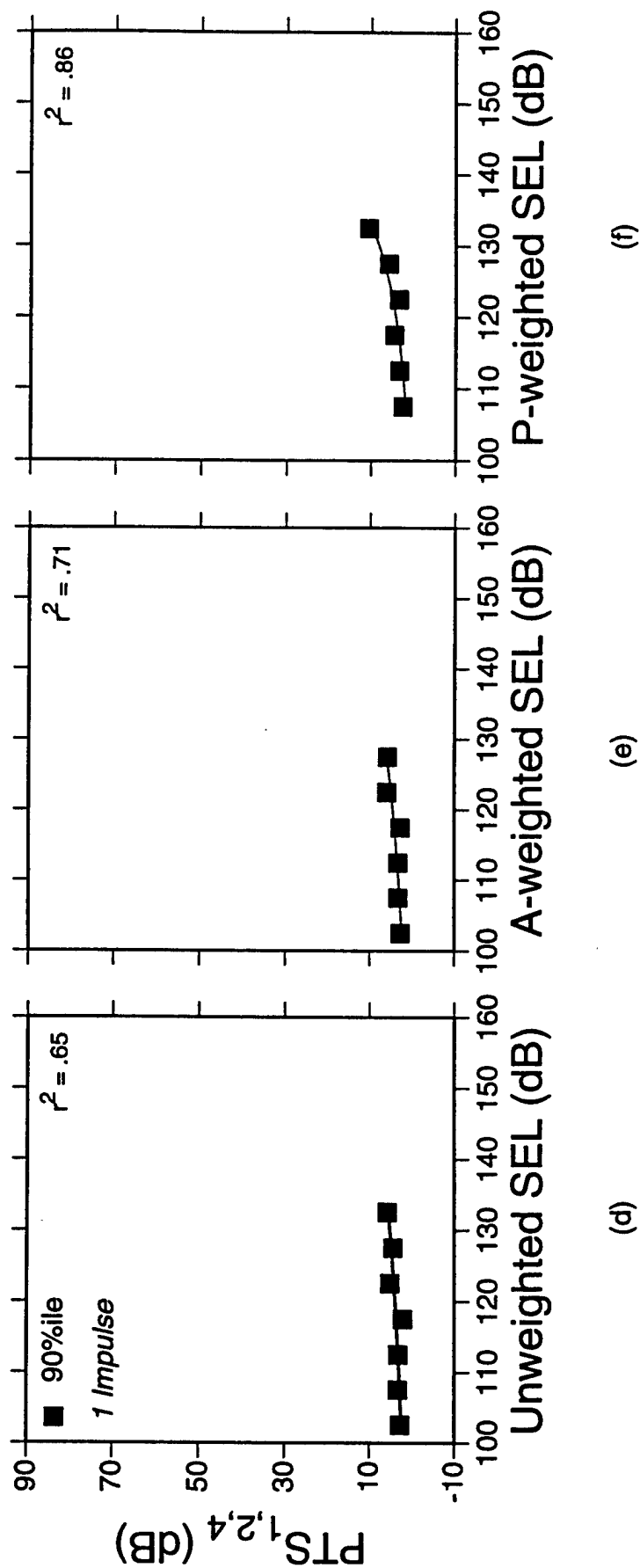
Figure 19 (d-f)   The 90th percentile average PTS measured at the 1, 2, and 4 kHz test frequencies for all animals

exposed to a single impulse falling within 5 dB bins of the indicated level of the hazard index (d)

Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL.   The solid line is the nonlinear

regression fit of Equation (20) to the data.   The three parameters, A, B, and C of Equation (20)

corresponding to each regression line are listed in Table 5. (r^2 = coefficient of determination)
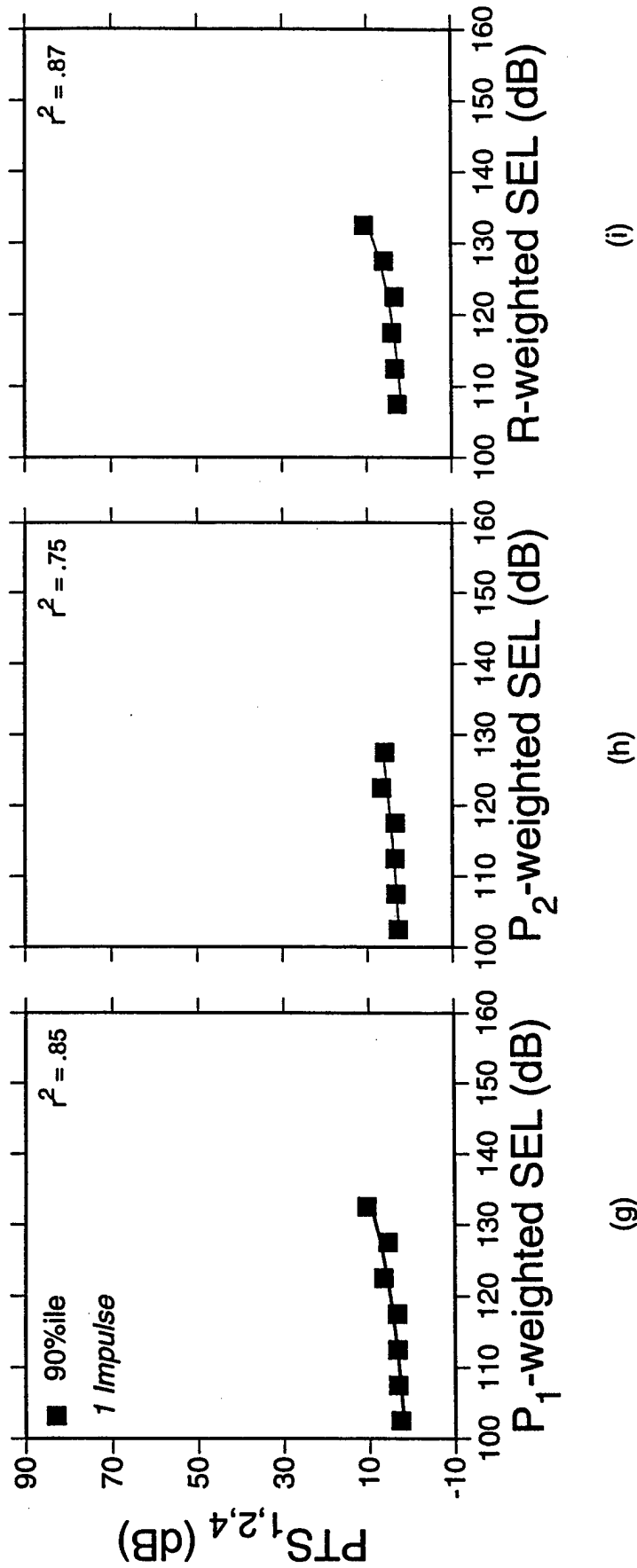
Figure 19 (g-i)   The 90th percentile average PTS measured at the 1, 2, and 4 kHz test frequencies for all animals

exposed to a single impulse falling within 5 dB bins of the indicated level of the hazard index (g) P_1-

weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL.   The solid line is the nonlinear regression

fit of Equation (20) to the data.   The three parameters, A, B, and C of Equation (20) corresponding to

each regression line are listed in Table 5. (r^2 = coefficient of determination)
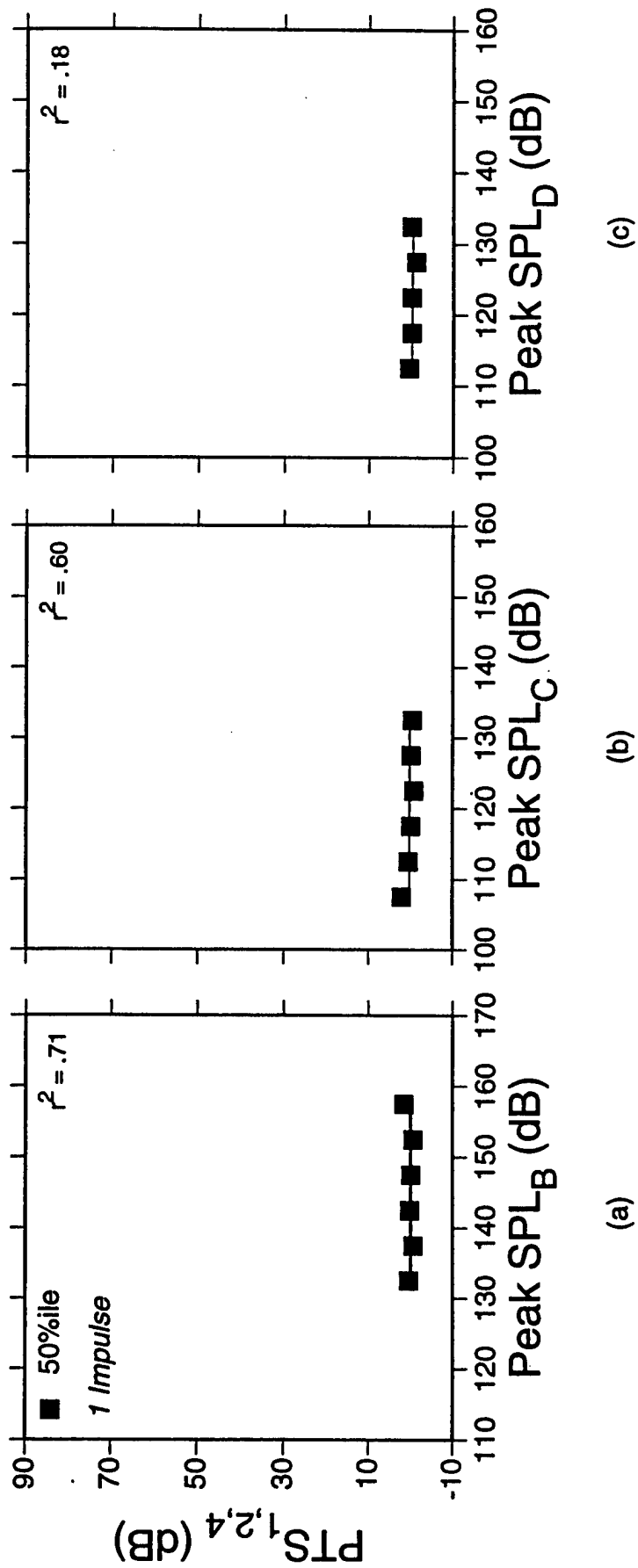
Figure 20 (a-c)   The 50th percentile average PTS measured at the 1, 2, and 4 kHz test frequencies for all animals

exposed to a single impulse falling within 5 dB bins of the indicated level of the hazard index (a)

Peak SPL_B, (b) Peak SPL_C, and (c) Peak SPL_D. The solid line is the nonlinear regression fit of

Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to

each regression line are listed in Table 5. (r^2 = coefficient of determination)
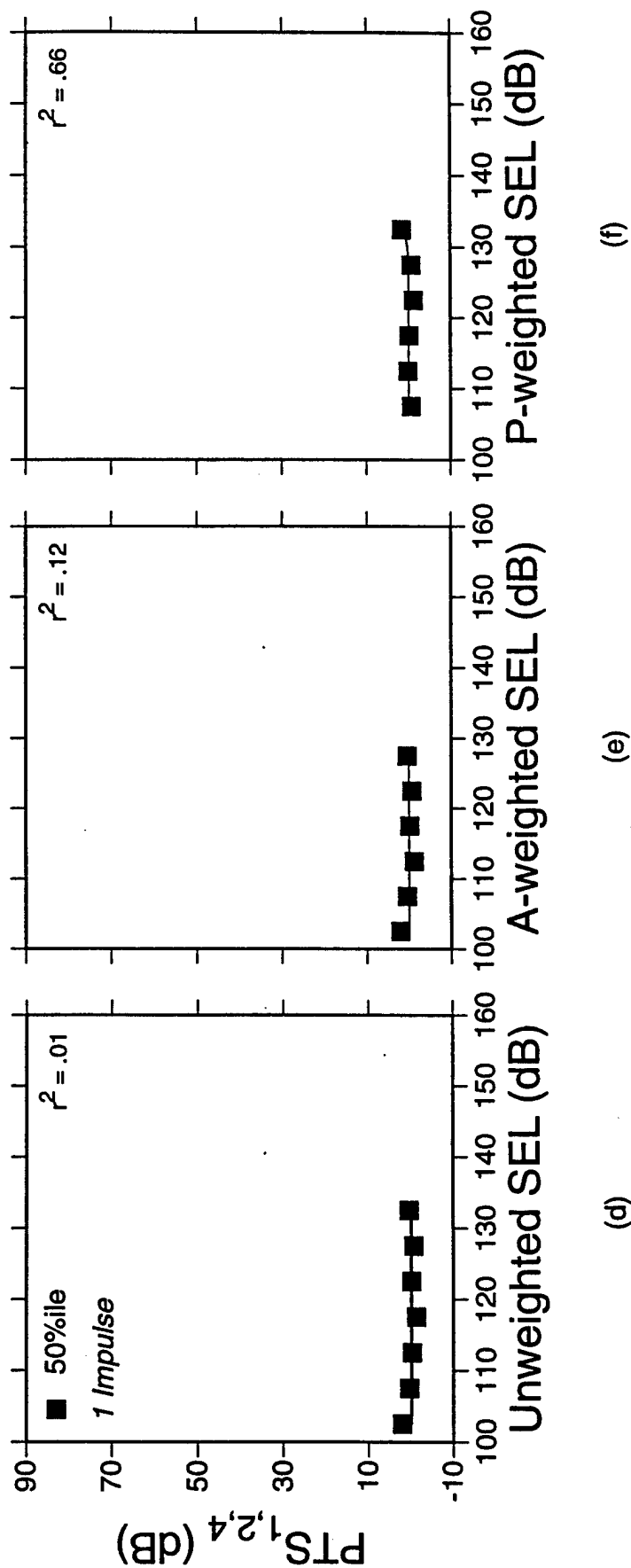
Figure 20 (d-f)   The 50th percentile average PTS measured at the 1, 2, and 4 kHz test frequencies for all animals

exposed to a single impulse falling within 5 dB bins of the indicated level of the hazard index (d)

Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL.   The solid line is the nonlinear

regression fit of Equation (20) to the data.   The three parameters, A, B, and C of Equation (20)

corresponding to each regression line are listed in Table 5. (r^2 = coefficient of determination)
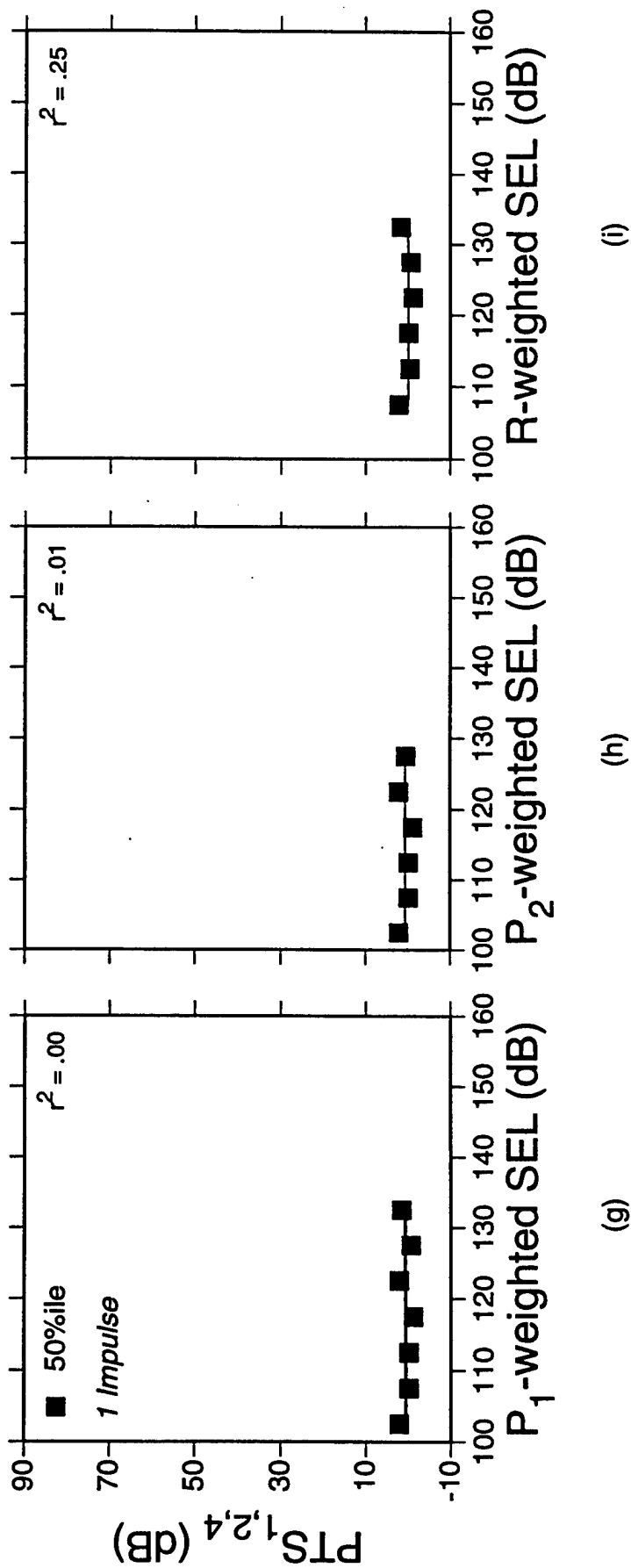
Figure 20 (g-i)   The 50th percentile average PTS measured at the 1, 2, and 4 kHz test frequencies for all animals exposed to a single impulse falling within 5 dB bins of the indicated level of the hazard index (g) P_1-weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 5. (r^2 = coefficient of determination)
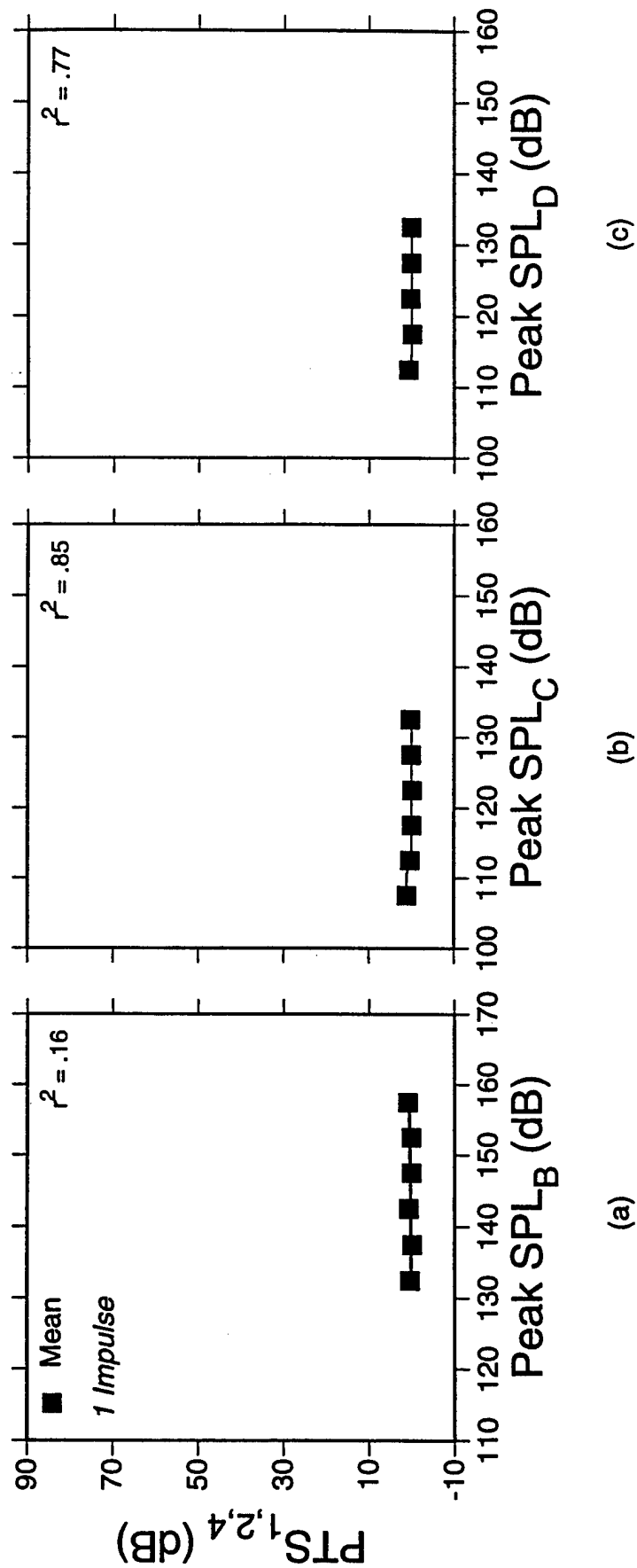
Figure 21 (a-c) The mean average PTS measured at the 1, 2, and 4 kHz test frequencies for all animals exposed to a single impulse falling within 5 dB bins of the indicated level of the hazard index (a) Peak SPL_B, (b) Peak SPL_C, and (c) Peak SPL_D. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 5. (r^2 = coefficient of determination)
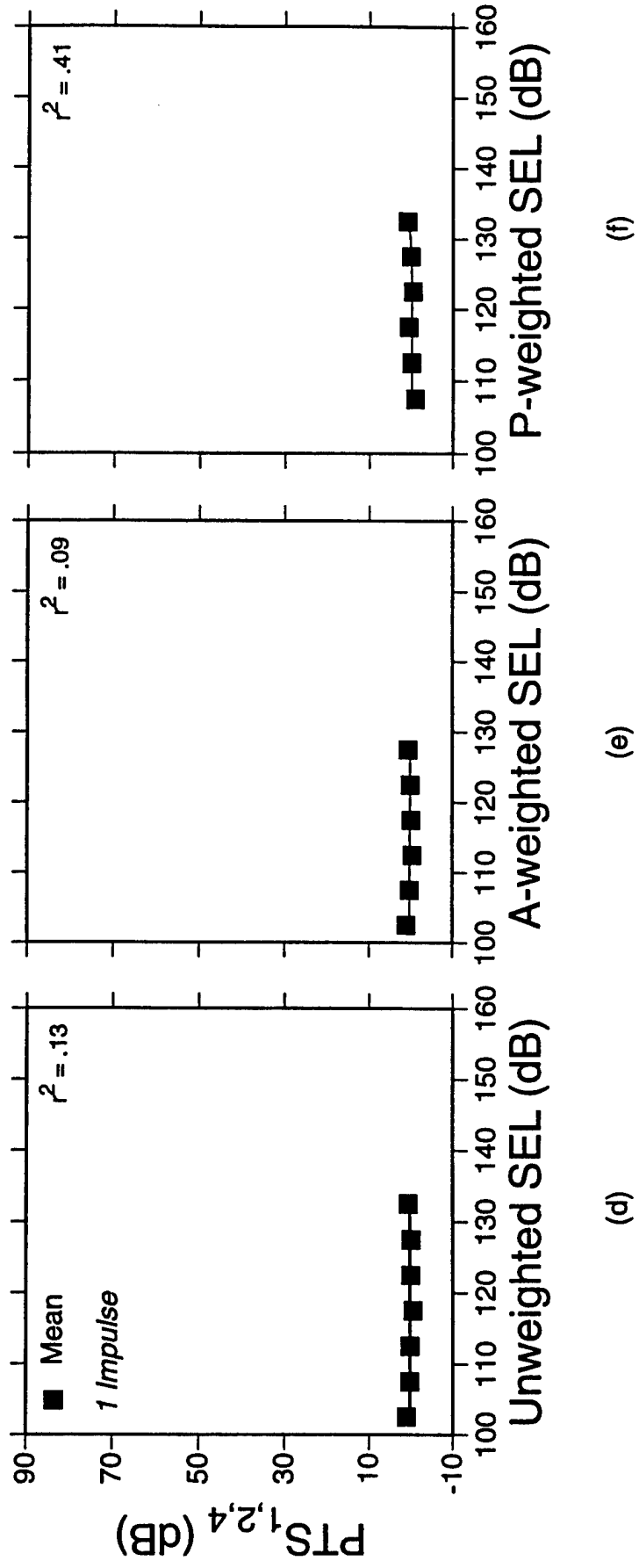
Figure 21 (d-f)   The mean average PTS measured at the 1, 2, and 4 kHz test frequencies for all animals exposed to a single impulse falling within 5 dB bins of the indicated level of the hazard index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 5. (r^2 = coefficient of determination)
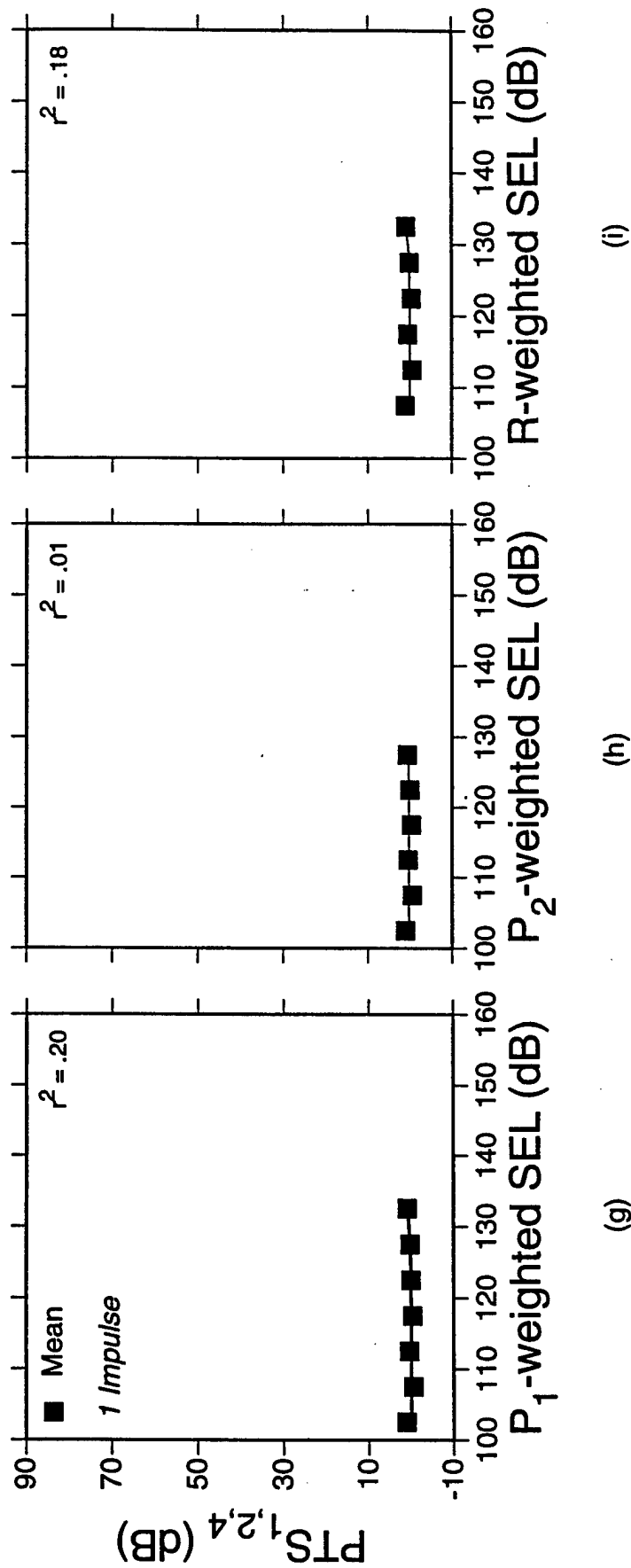
Figure 21 (g-i)   The mean average PTS measured at the 1, 2, and 4 kHz test frequencies for all animals exposed

to a single impulse falling within 5 dB bins of the indicated level of the hazard index (g) P_1-weighted

SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL. The solid line is the nonlinear regression fit of

Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to

each regression line are listed in Table 5. (r^2 = coefficient of determination)
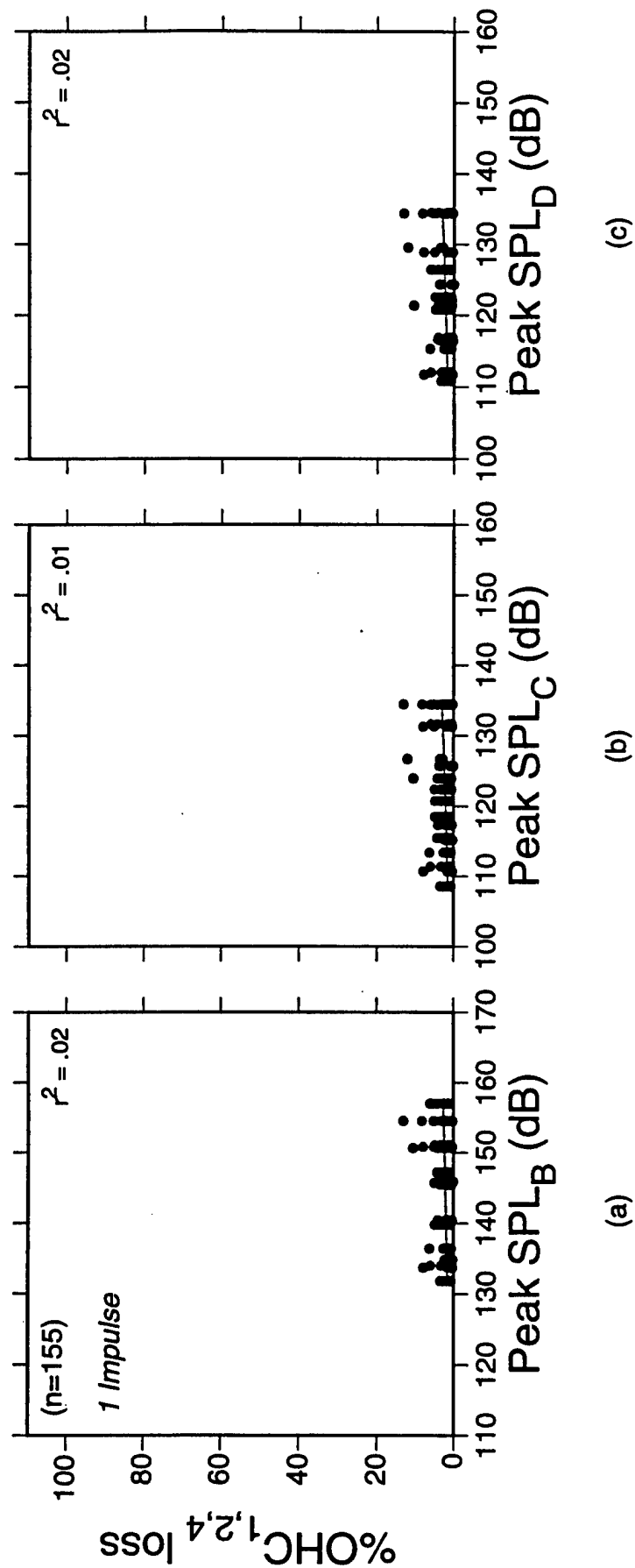
Figure 22 (a-c) The average percent OHC loss in the cochlea over octave-band lengths of the basilar membrane centered at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for all animals exposed to a single impulse (n=155) at the indicated level of the hazard index (a) Peak SPL$_B$, (b) Peak SPL$_C$, and (c) Peak SPL$_D$. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table6. (r^2 = coefficient of determination)
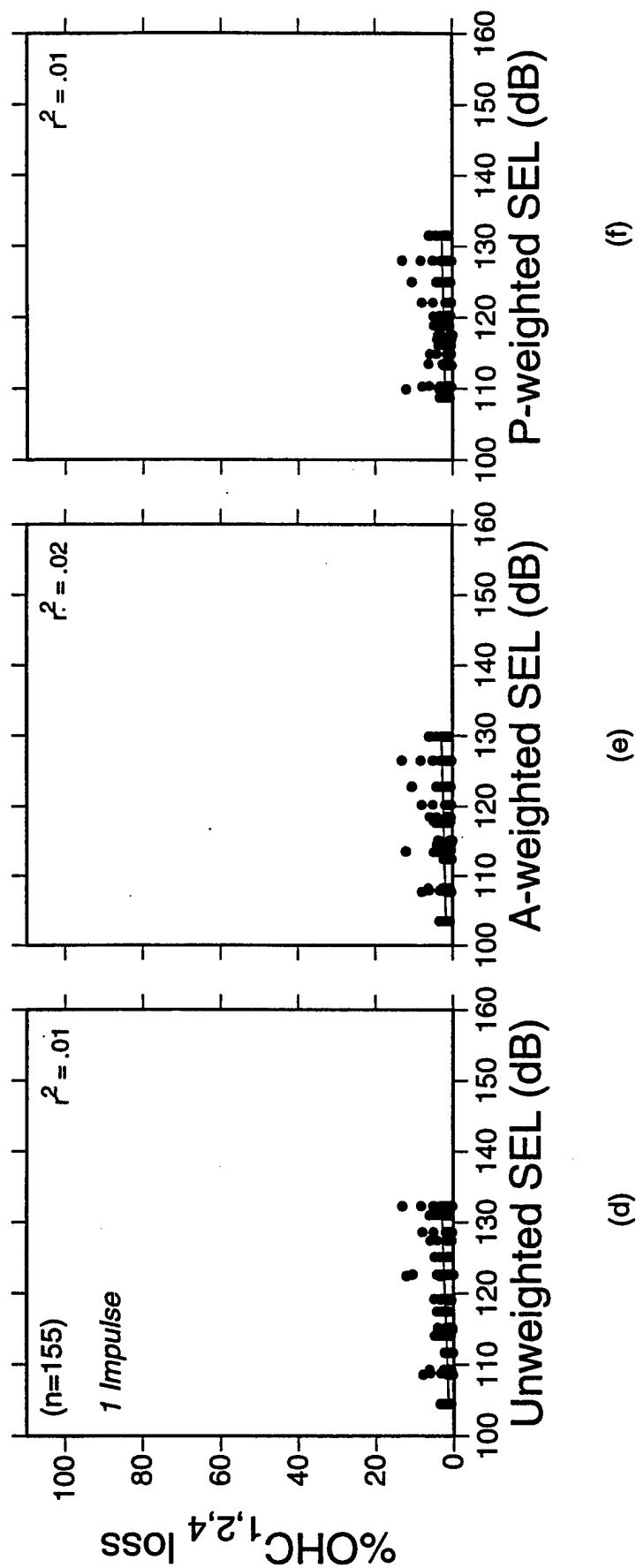
Figure 22 (d-f)   The average percent OHC loss in the cochlea over octave-band lengths of the basilar membrane

centered at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for all

animals exposed to a single impulse (n=155) at the indicated level of the hazard index (d) Unweighted

SEL, (e) A-weighted SEL, and (f) P-weighted SEL. The solid line is the nonlinear regression fit of

Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each

regression line are listed in Table 6. (r^2 = coefficient of determination)
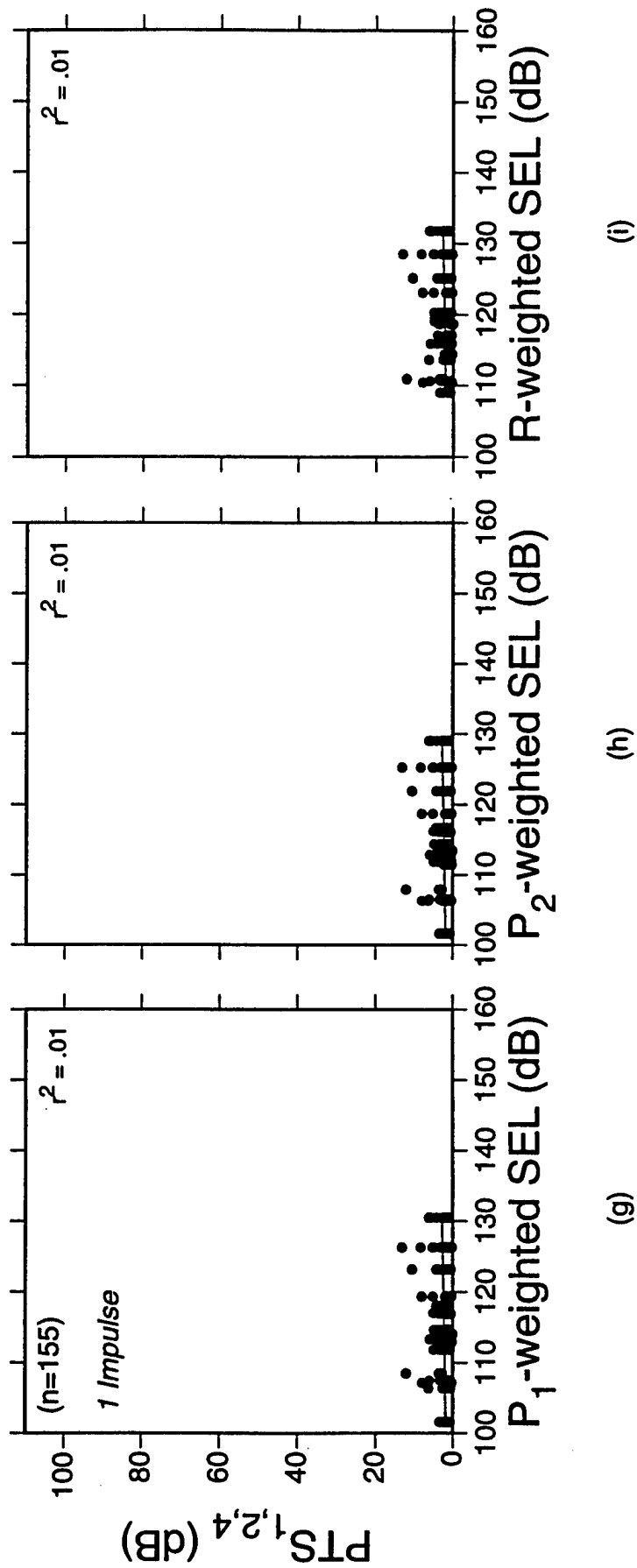
Figure 22 (g-i)   The average percent OHC loss in the cochlea over octave-band lengths of the basilar membrane centered at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for all animals exposed to a single impulse (n=155) at the indicated level of the hazard index (g) P_1-weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 6. (r^2 = coefficient of determination)
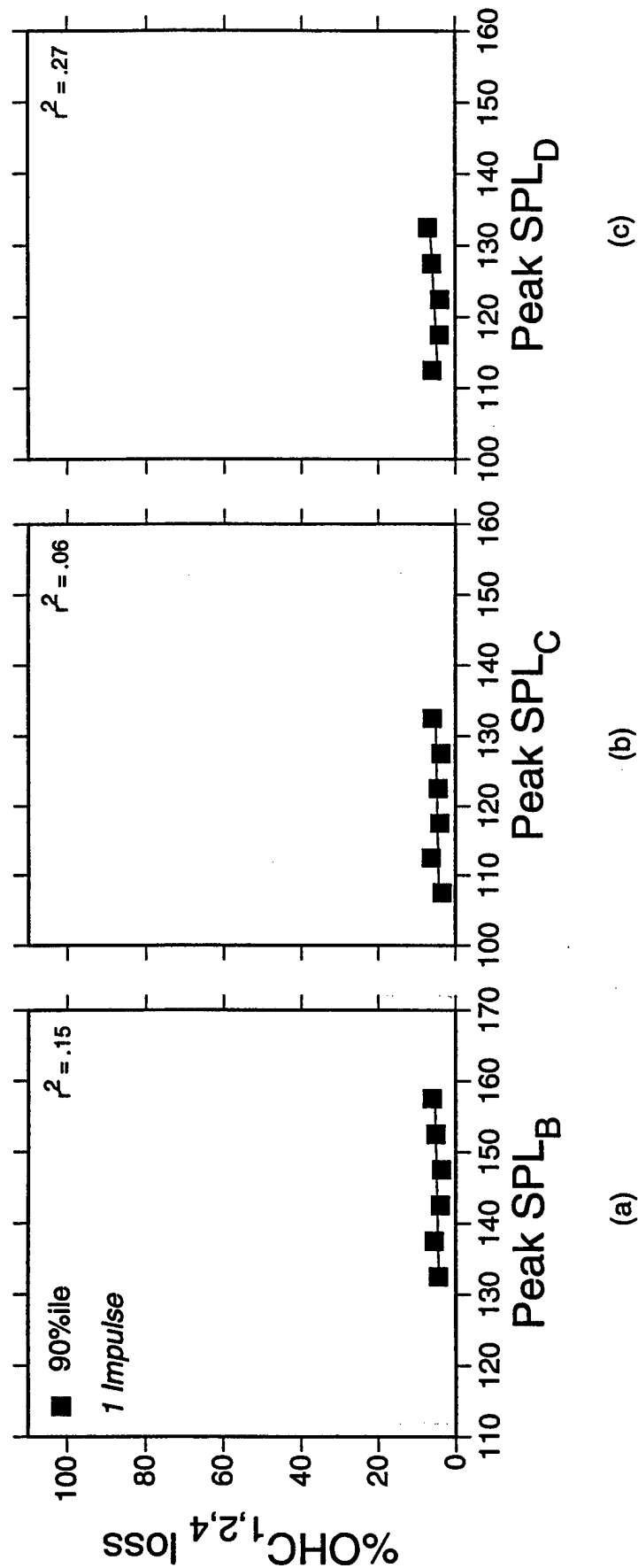
Figure 23 (a-c) The 90th percentile of percent OHC loss in the cochlea over octave-band lengths of the basilar membrane centered at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for all animals exposed to a single impulse falling within 5 dB bins of the indicated level of the hazard index (a) Peak SPL_B, (b) Peak SPL_C, and (c) Peak SPL_D. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 6. (r^2 = coefficient of determination)
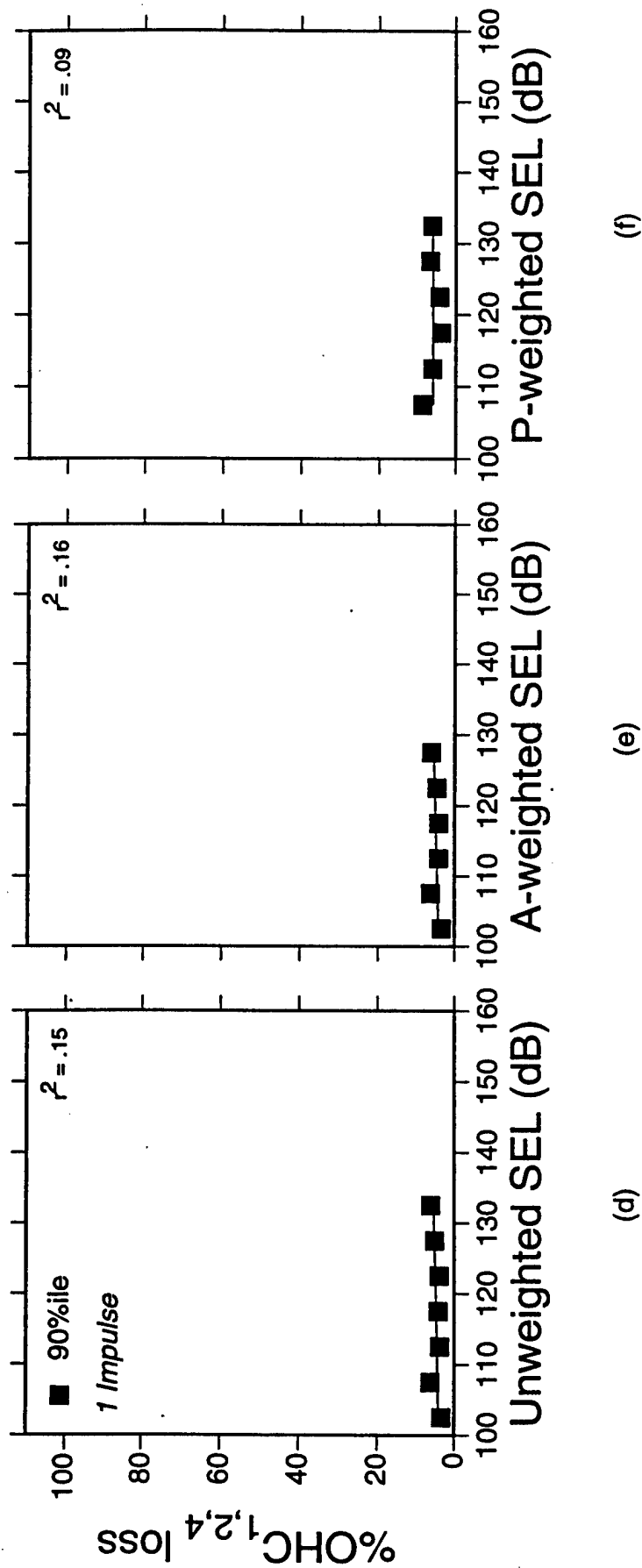
Figure 23 (d-f)   The 90th percentile of percent OHC loss in the cochlea over octave-band lengths of the basilar

membrane centered at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for

all animals exposed to a single impulse falling within 5 dB bins of the indicated level of the hazard index

(d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL. The solid line is the nonlinear

regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20)

corresponding to each regression line are listed in Table 6. (r^2 = coefficient of determination)
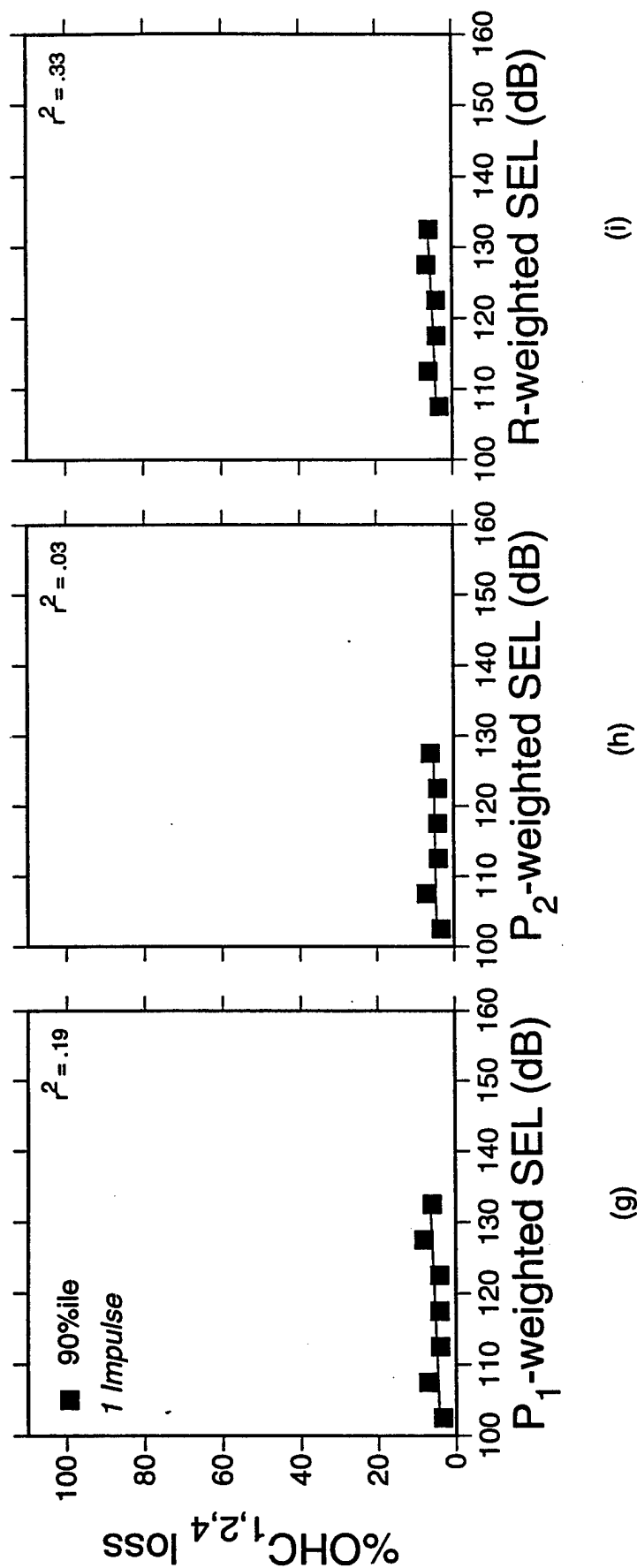
Figure 23 (g-i) The 90th percentile of percent OHC loss in the cochlea over octave-band lengths of the basilar membrane centered at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for all animals exposed to a single impulse falling within 5 dB bins of the indicated level of the hazard index (g) P_1-weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 6. (r^2 = coefficient of determination)
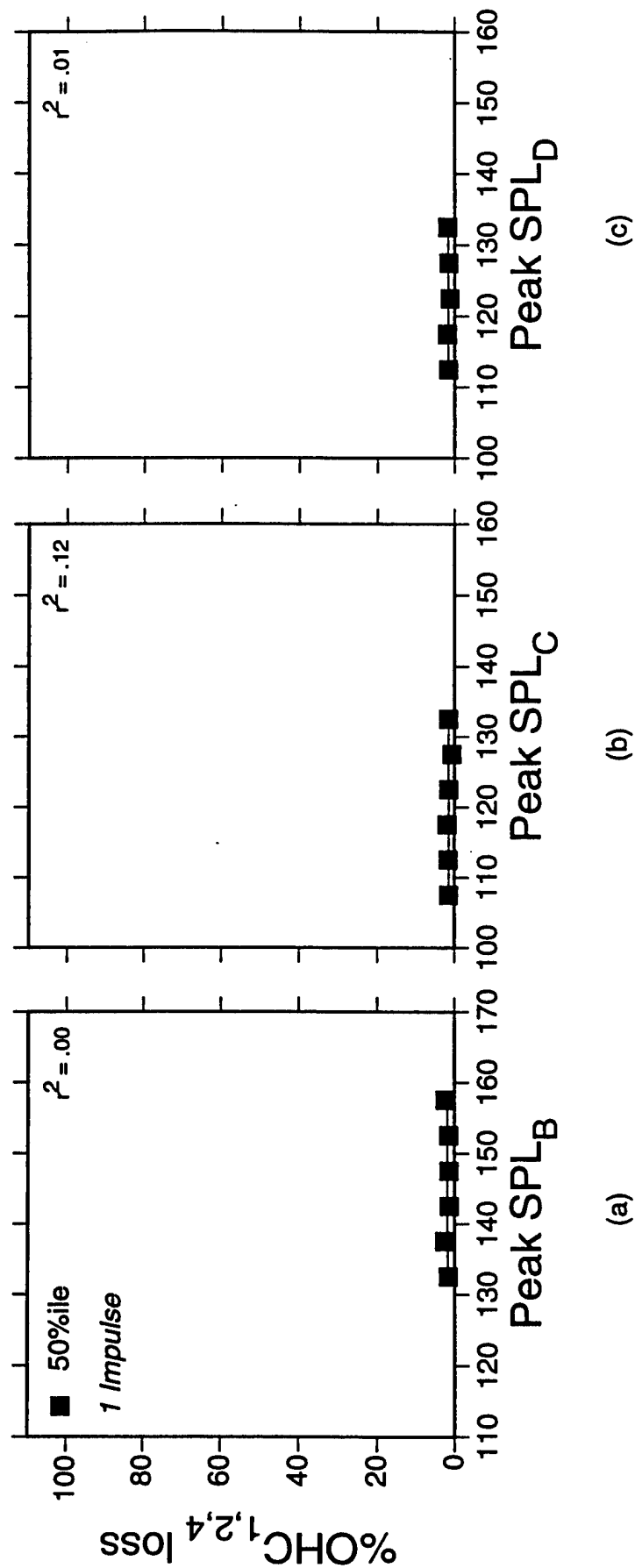
Figure 24 (a-c)   The 50th percentile of percent OHC loss in the cochlea over octave-band lengths of the basilar

membrane centered at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies

for all animals exposed to a single impulse falling within 5 dB bins of the indicated level of the hazard

index (a) Peak SPL$_B$, (b) Peak SPL$_C$, and (c) Peak SPL$_D$.   The solid line is the nonlinear regression fit

of Equation (20) to the data.   The three parameters, A, B, and C of Equation (20) corresponding to

each regression line are listed in Table 6. (r^2 = coefficient of determination)
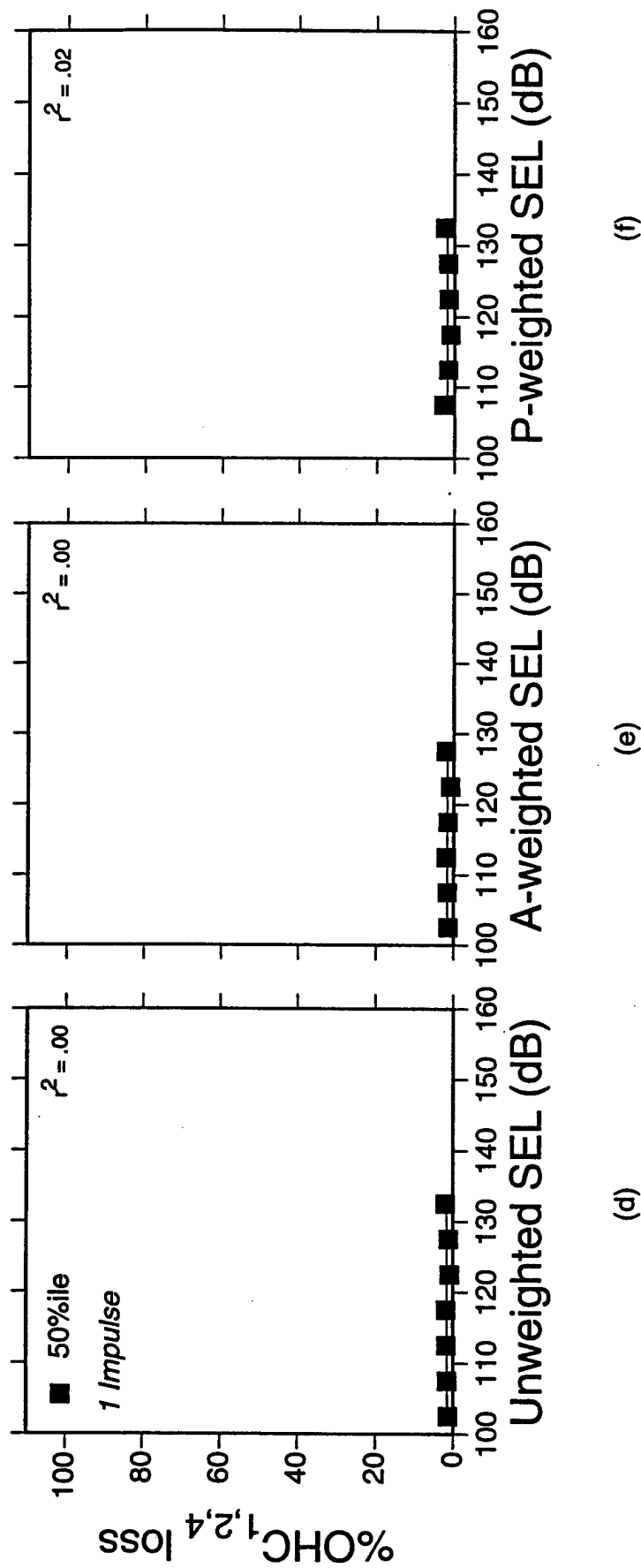
Figure 24 (d-f)   The 50th percentile of percent OHC loss in the cochlea over octave-band lengths of the basilar membrane centered at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for all animals exposed to a single impulse falling within 5 dB bins of the indicated level of the hazard index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 6. (r^2 = coefficient of determination)
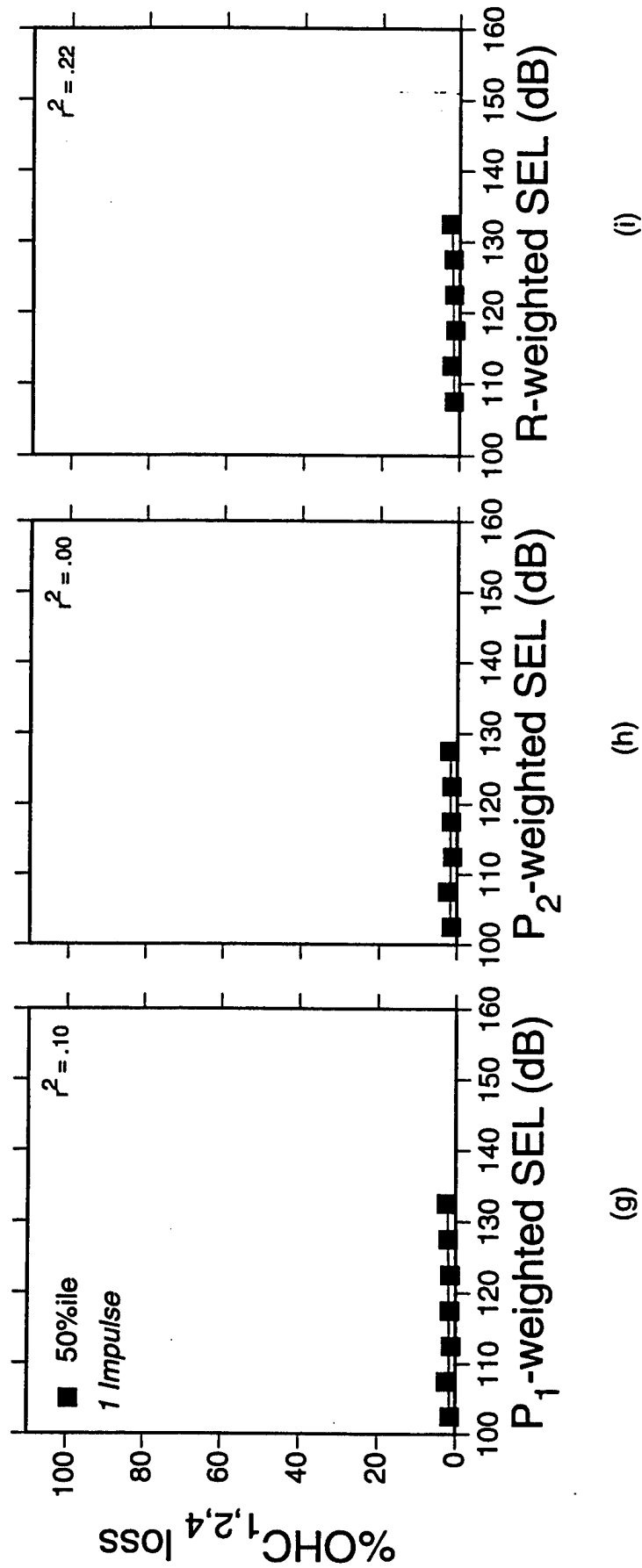
Figure 24 (g-i)   The 50th percentile of percent OHC loss in the cochlea over octave-band lengths of the basilar

membrane centered at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for

all animals exposed to a single impulse falling within 5 dB bins of the indicated level of the hazard index

(g) P_1-weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL. The solid line is the nonlinear

regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20)

corresponding to each regression line are listed in Table 6. (r^2 = coefficient of determination)
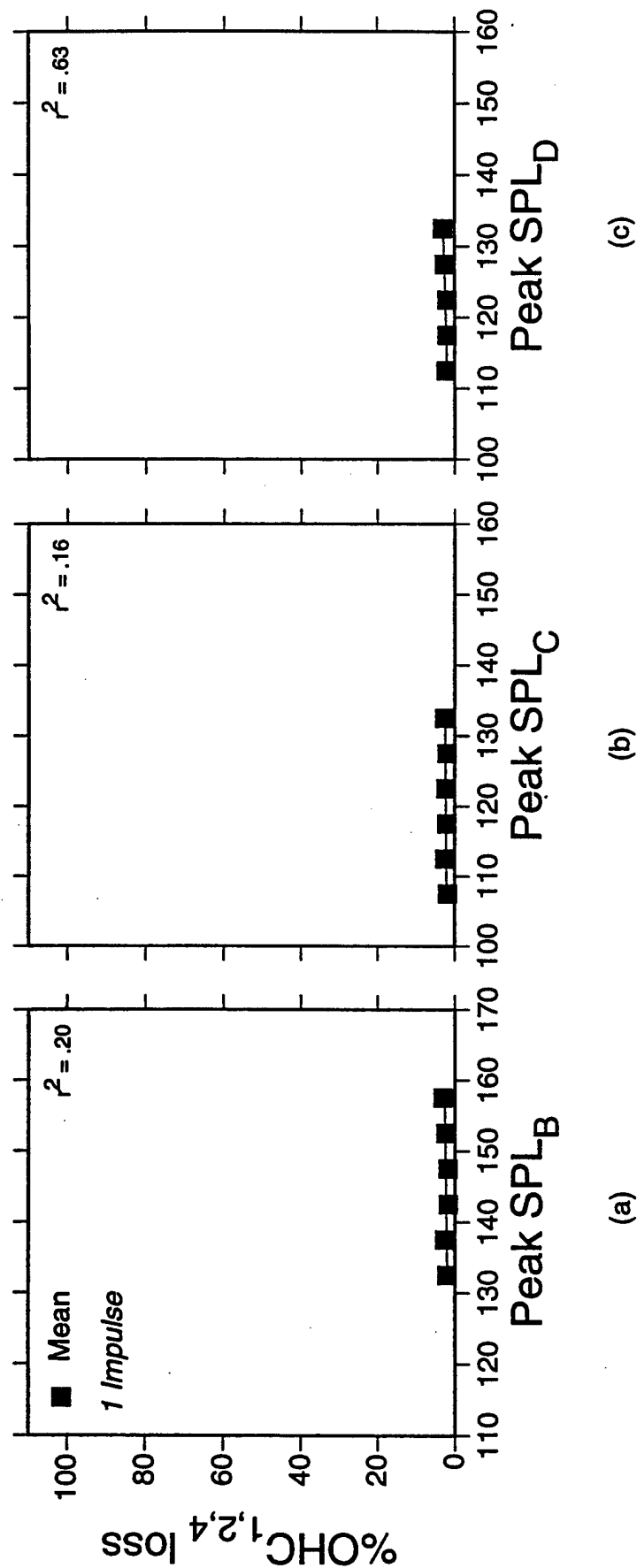
Figure 25 (a-c)   The mean percent OHC loss in the cochlea over octave-band lengths of the basilar membrane centered at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for all animals exposed to a single impulse falling within 5 dB bins of the indicated level of the hazard index (a) Peak SPL$_B$, (b) Peak SPL$_C$, and (c) Peak SPL$_D$. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 6. (r^2 = coefficient of determination)
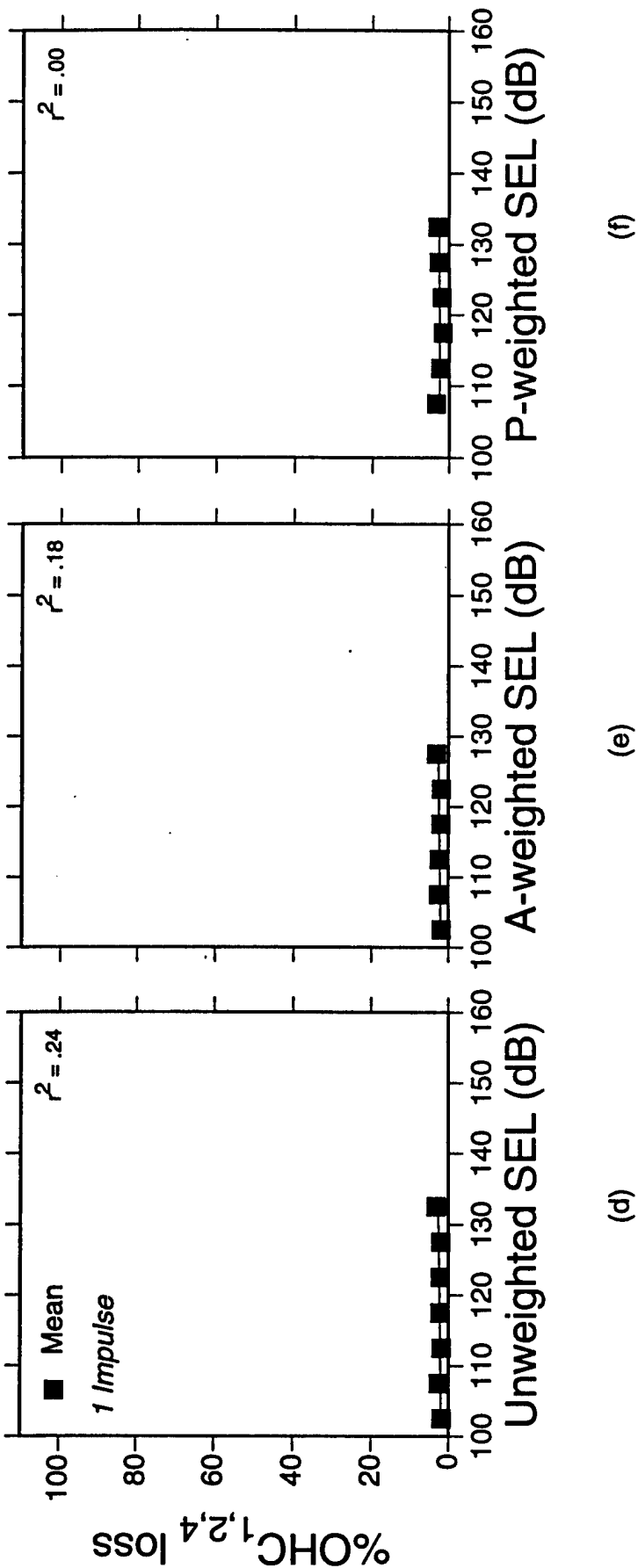
Figure 25 (d-f)   The mean percent OHC loss in the cochlea over octave-band lengths of the basilar membrane centered

at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for all animals exposed to

a single impulse falling within 5 dB bins of the indicated level of the hazard index (d) Unweighted SEL, (e)

A-weighted SEL, and (f) P-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to

the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are

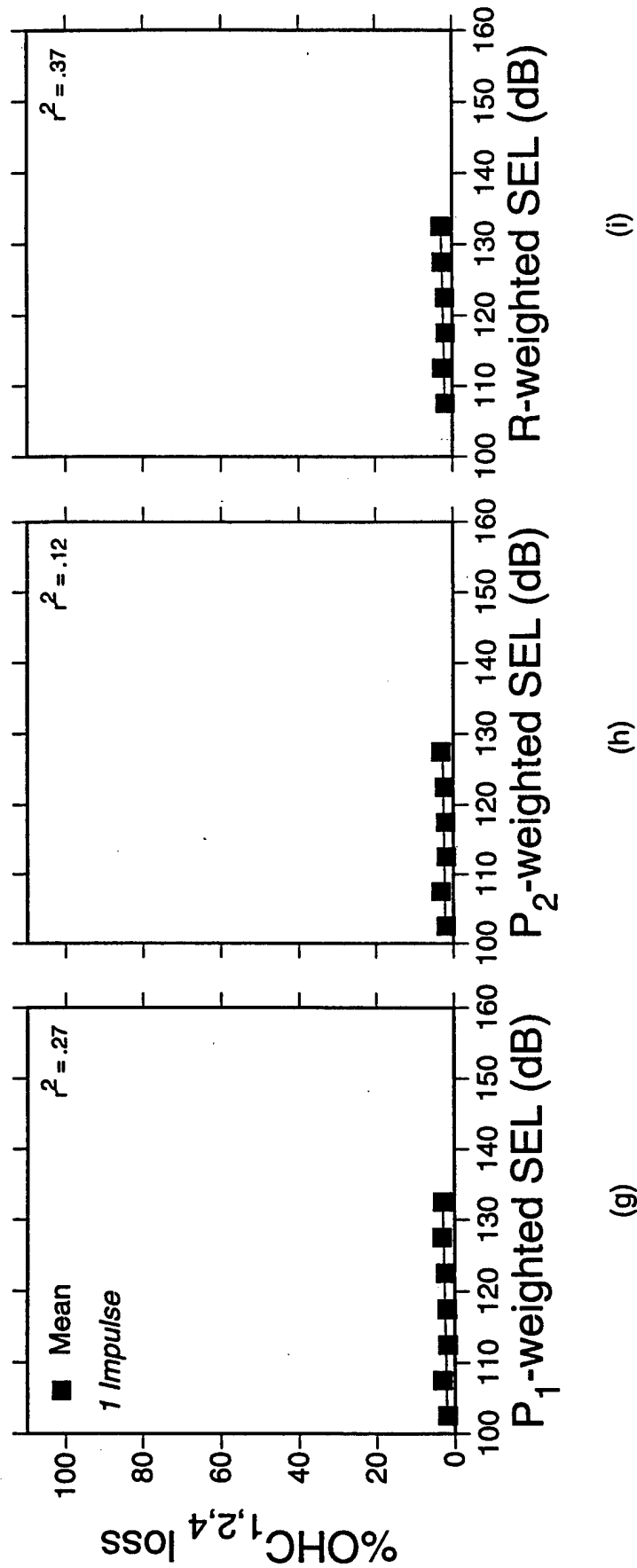listed in Table 6. (r^2 = coefficient of determination)

Figure 25 (g-i)   The mean percent OHC loss in the cochlea over octave-band lengths of the basilar membrane centered

at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for all animals exposed to

a single impulse falling within 5 dB bins of the indicated level of the hazard index (g) P_1-weighted SEL, (h)

P_2-weighted SEL, and (i) R-weighted SEL.   The solid line is the nonlinear regression fit of Equation (20) to

the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are

listed in Table 6. (r^2 = coefficient of determination)

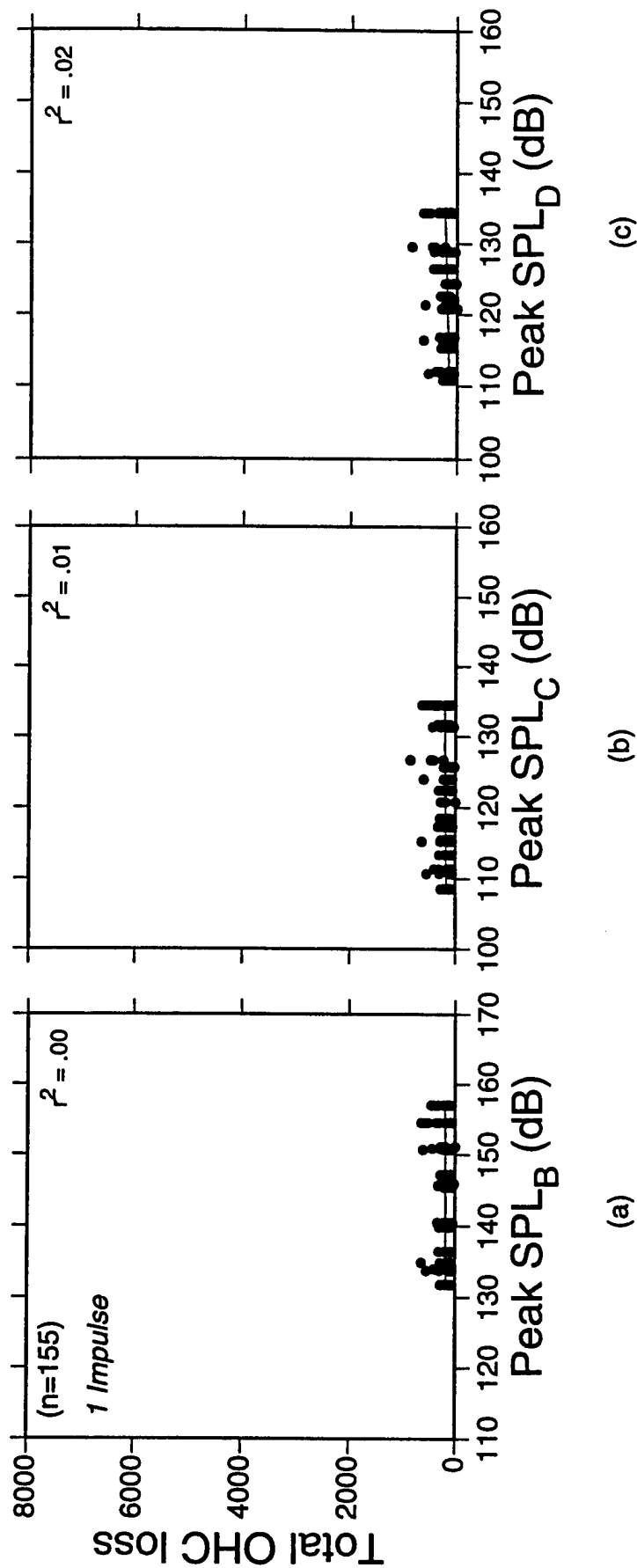Figure 26 (a-c)   Total OHC loss in the cochlea of each animal exposed to a single impulse (n=155) at the indicated

level of the hazard index (a) Peak SPL_B, (b) Peak SPL_C, and (c) Peak SPL_D. The solid line is the

nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation

(20) corresponding to each regression line are listed in Table 7. (r^2 = coefficient of determination)
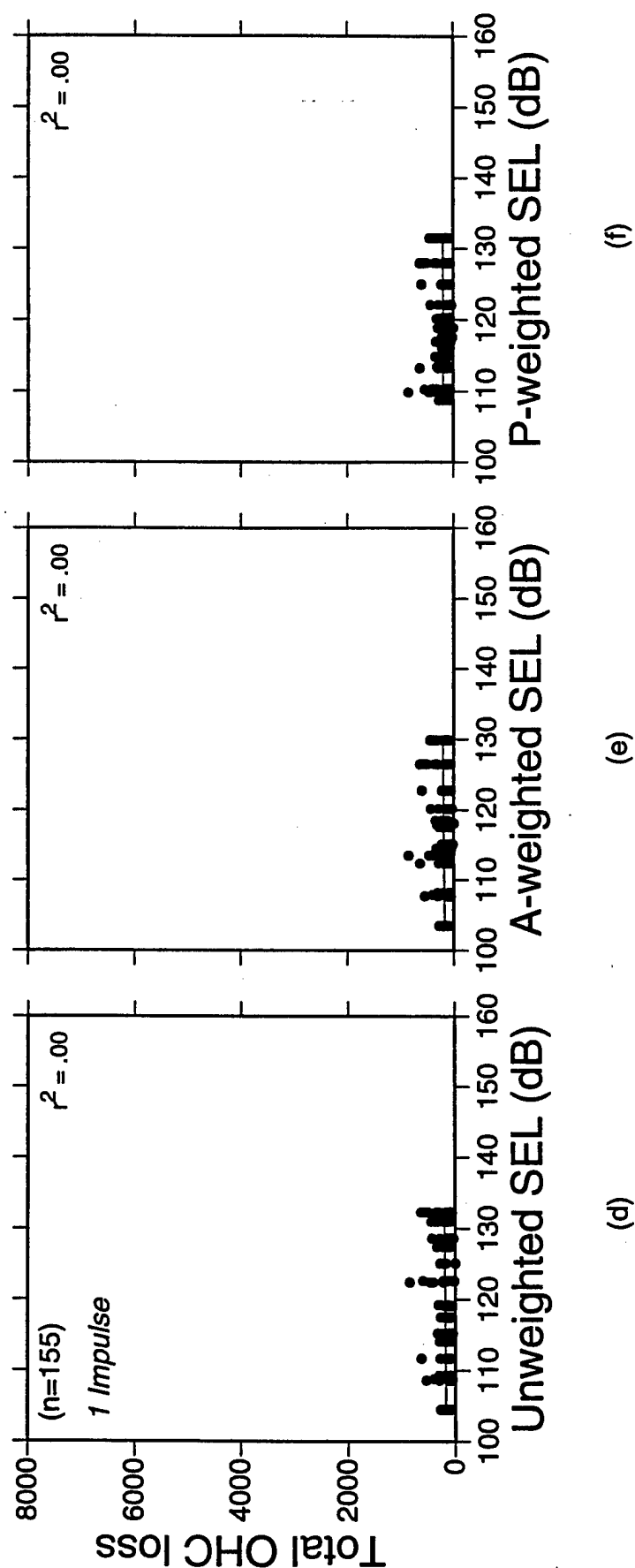
Figure 26 (d-f)   Total OHC loss in the cochlea of each animal exposed to a single impulse (n=155) at the indicated

level of the hazard index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL.   The solid

line is the nonlinear regression fit of Equation (20) to the data.   The three parameters, A, B, and C of

Equation (20) corresponding to each regression line are listed in Table 7.   (r^2 = coefficient of
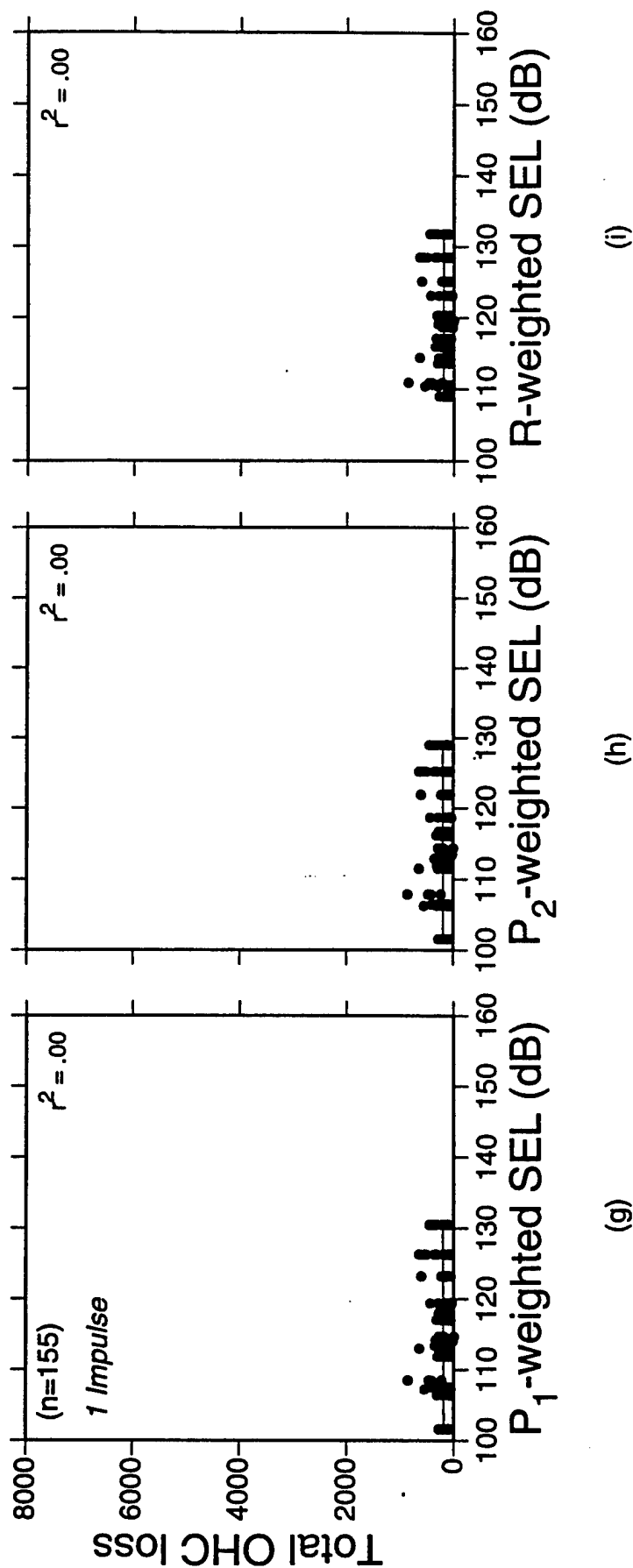
determination)

Figure 26 (g-i) Total OHC loss in the cochlea of each animal exposed to a single impulse (n=155) at the indicated

level of the hazard index (g) P₁-weighted SEL, (h) P₂-weighted SEL, and (i) R-weighted SEL. The

solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C

of Equation (20) corresponding to each regression line are listed in Table 7. (r^2 = coefficient of
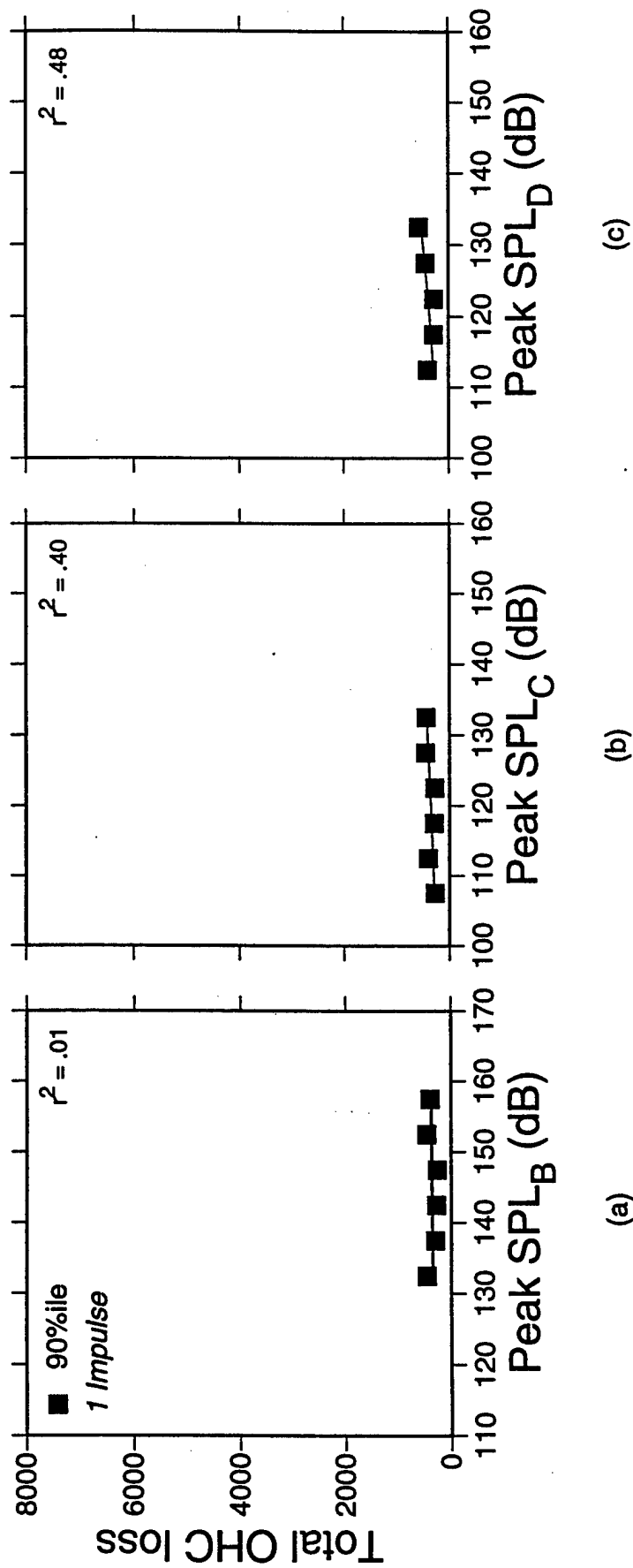
determination)

Figure 27 (a-c)   The 90th percentile total OHC loss for all animals exposed to a single impulse falling within 5 dB bins of the indicated level of the hazard index (a) Peak SPL$_B$, (b) Peak SPL$_C$, and (c) Peak SPL$_D$.   The solid line is the nonlinear regression fit of Equation (20) to the data.   The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 7.   (r^2 = coefficient of determination)
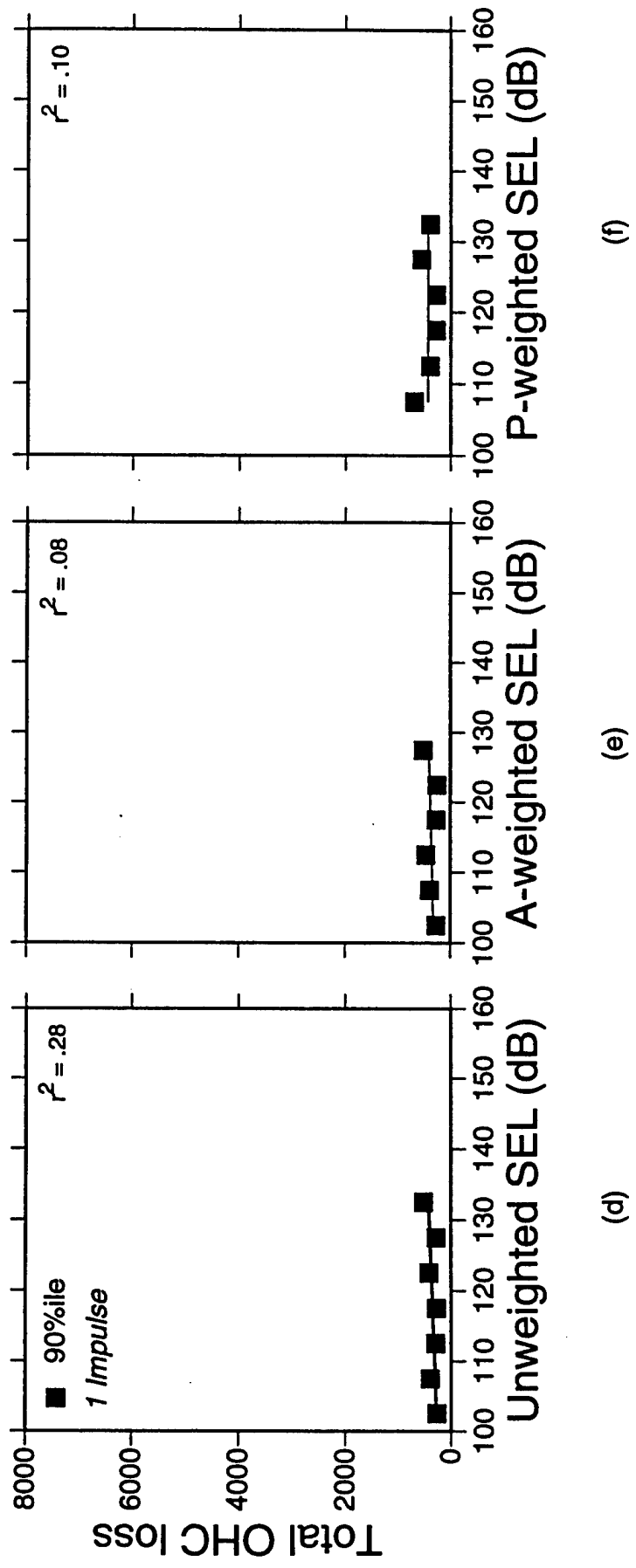
Figure 27 (d-f) The 90th percentile total OHC loss for all animals exposed to a single impulse falling within 5 dB bins of the indicated level of the hazard index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 7. (r^2 = coefficient of determination)
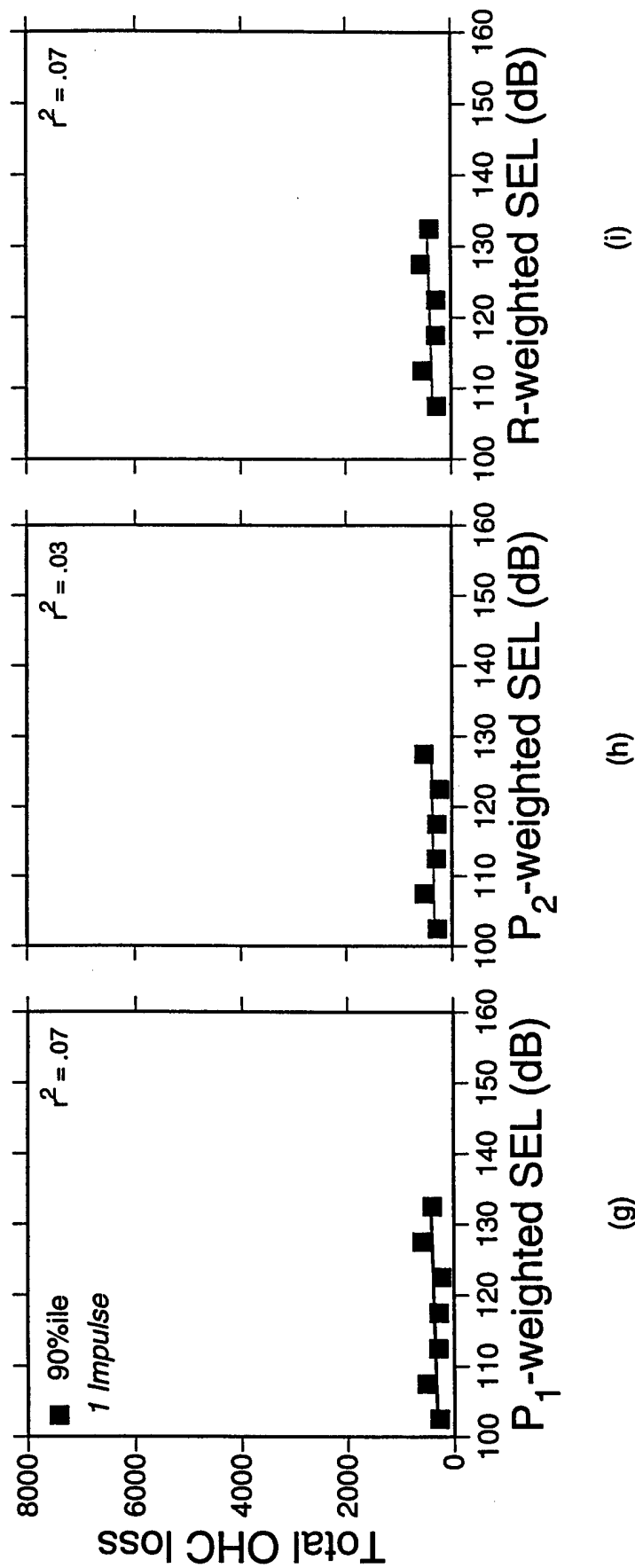
Figure 27 (g-i)   The 90th percentile total OHC loss for all animals exposed to a single impulse falling within 5 dB bins of the indicated level of the hazard index (g) P_1-weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 7. (r^2 = coefficient of determination)
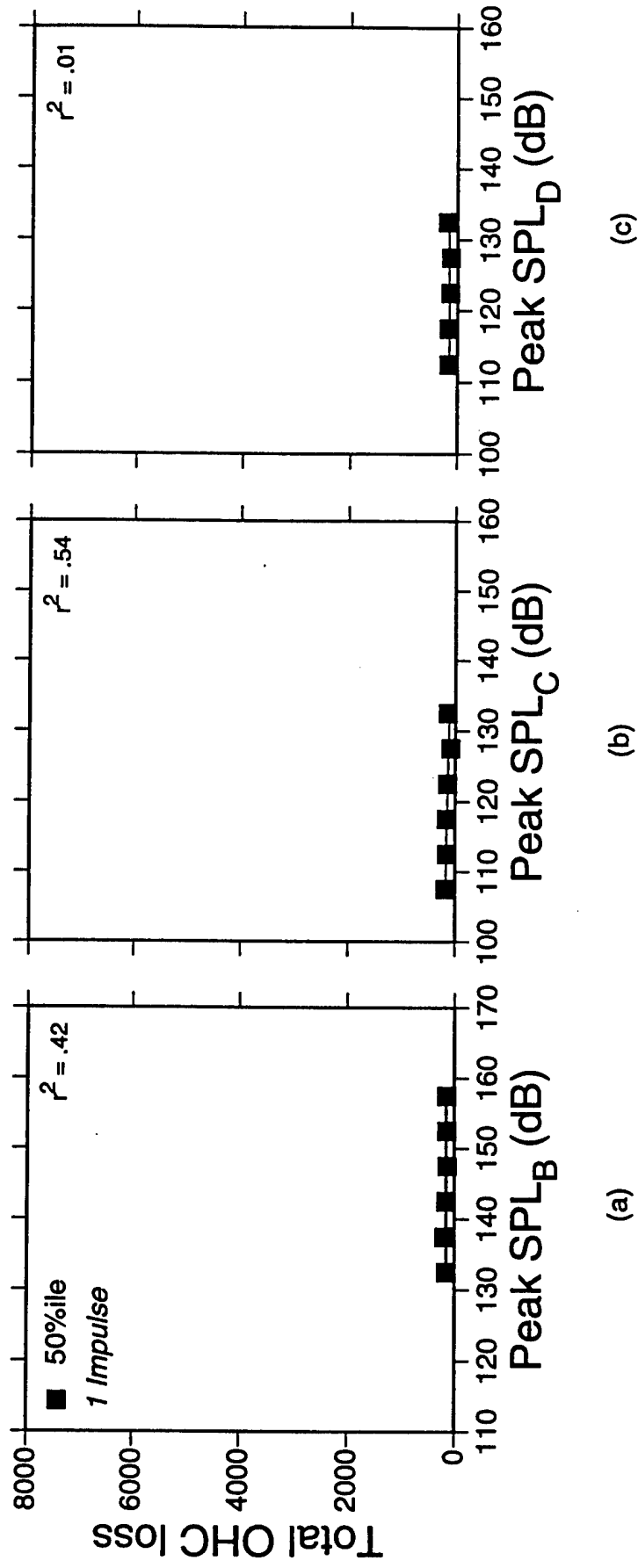
Figure 28 (a-c)   The 50th percentile total OHC loss for all animals exposed to a single impulse falling within 5 dB bins of the indicated level of the hazard index (a) Peak SPL$_B$, (b) Peak SPL$_C$, and (c) Peak SPL$_D$.   The solid line is the nonlinear regression fit of Equation (20) to the data.   The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 7.   (r^2 = coefficient of determination)
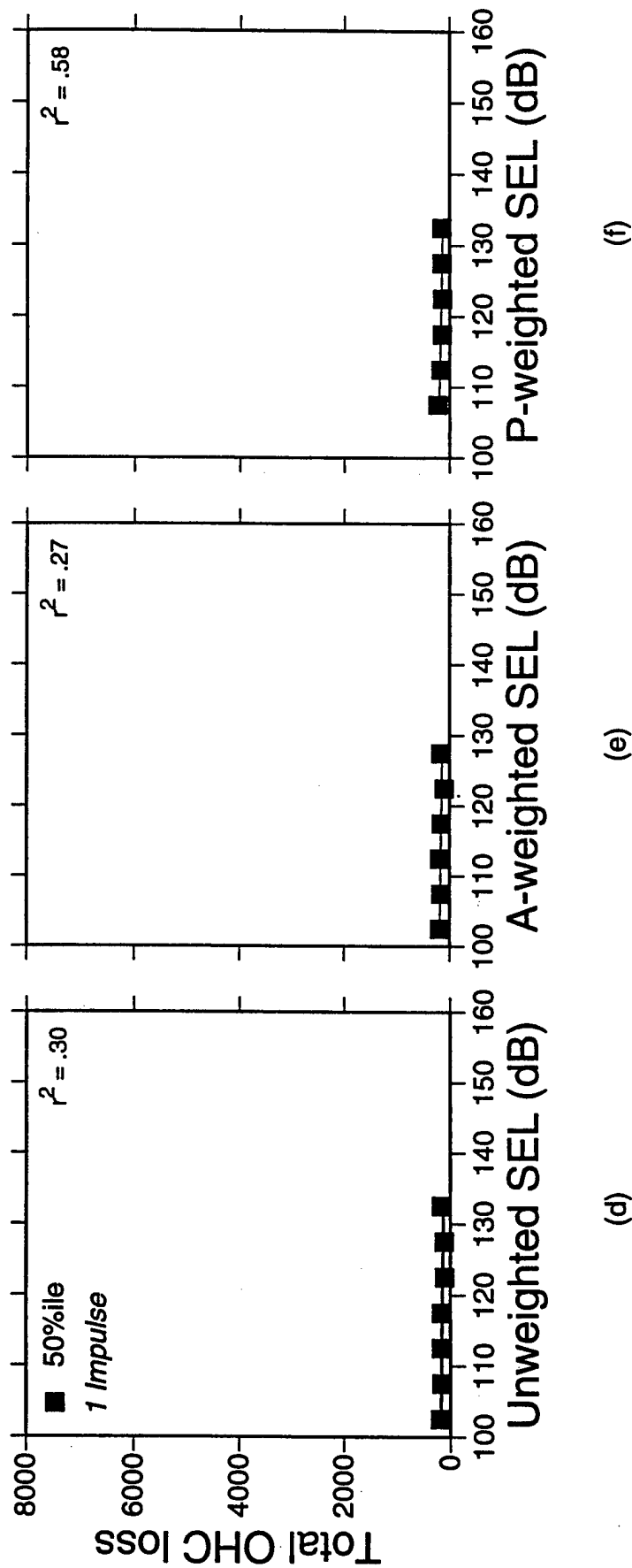
Figure 28 (d-f)   The 50th percentile total OHC loss for all animals exposed to a single impulse falling within 5 dB bins of the indicated level of the hazard index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL.   The solid line is the nonlinear regression fit of Equation (20) to the data.   The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 7. (r^2 = coefficient of determination)
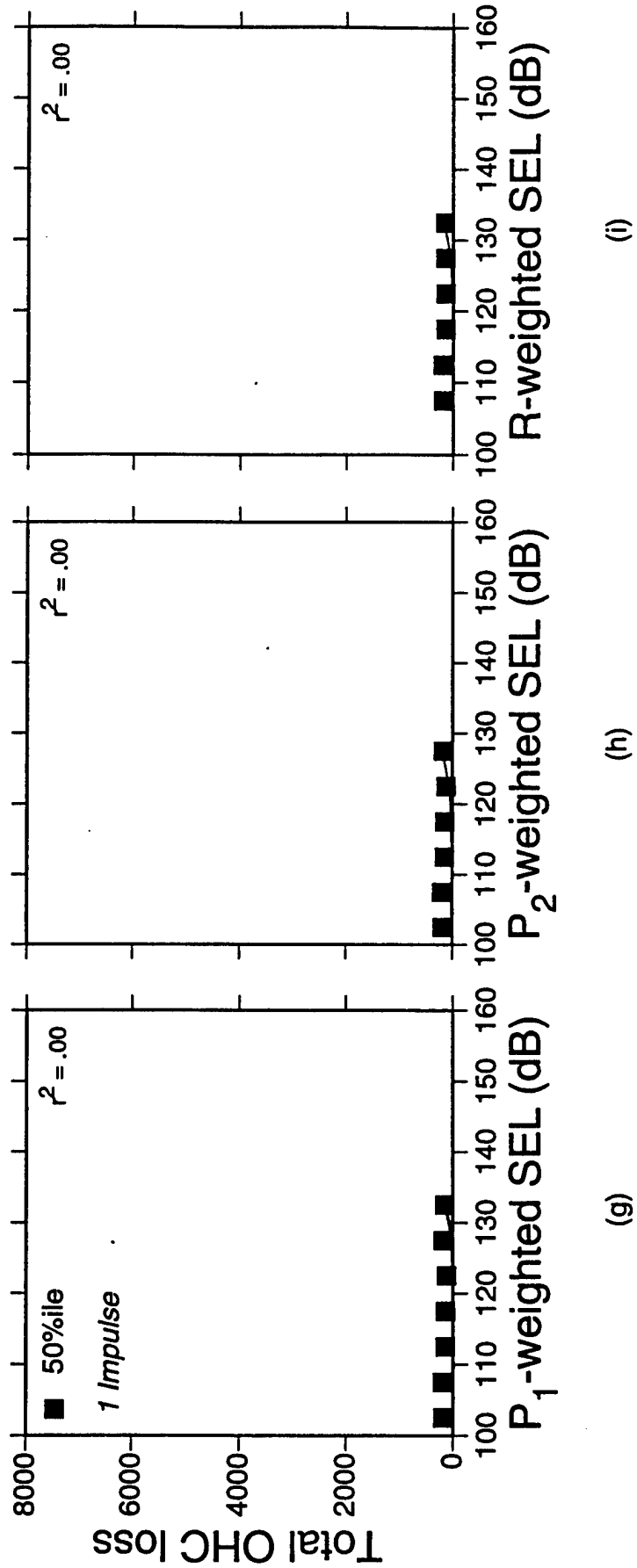
Figure 28 (g-i)   The 50th percentile total OHC loss for all animals exposed to a single impulse falling within 5 dB bins of

the indicated level of the hazard index (g) P_1-weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted

SEL. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters,

A, B, and C of Equation (20) corresponding to each regression line are listed in Table 7. (r^2 =
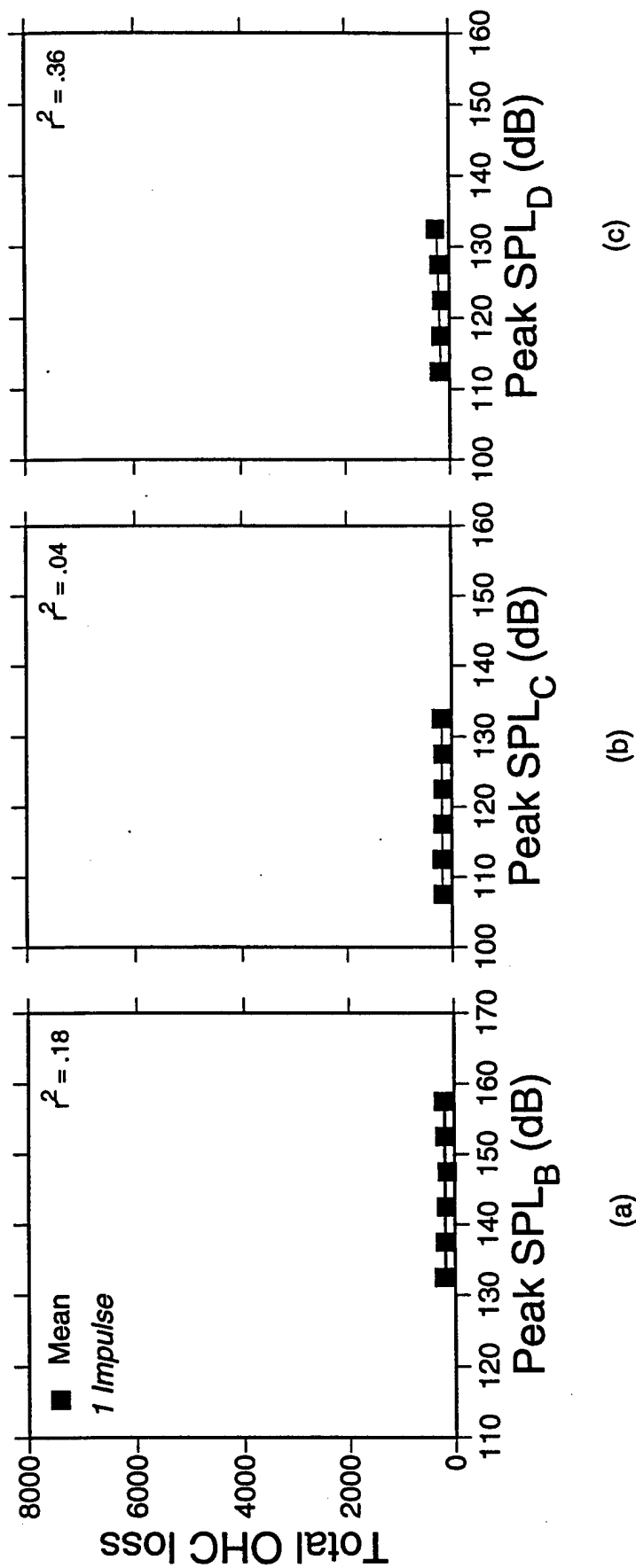
coefficient of determination)

Figure 29 (a-c) The mean total OHC loss for all animals exposed to a single impulse falling within 5 dB bins of the

indicated level of the hazard index (a) Peak SPL_B, (b) Peak SPL_C, and (c) Peak SPL_D. The solid line is

the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of

Equation (20) corresponding to each regression line are listed in Table 7. (r^2 = coefficient of
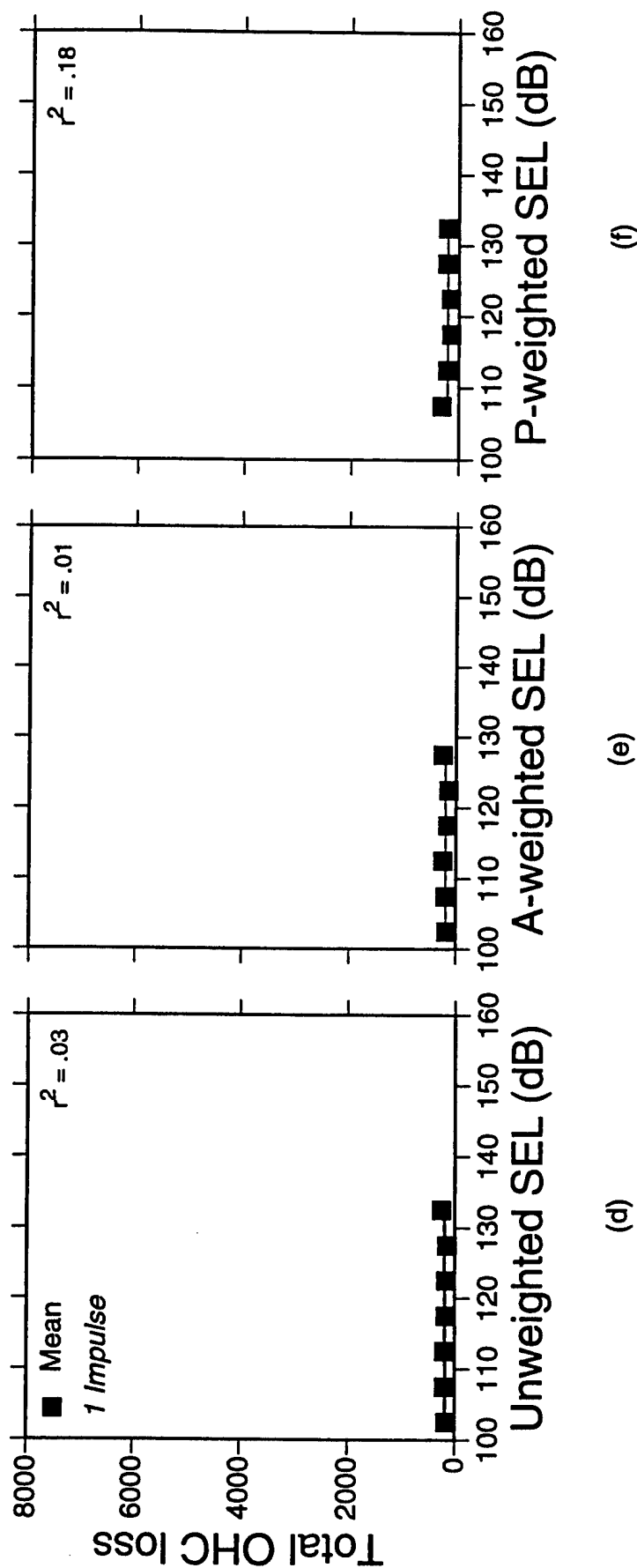
determination)

Figure 29 (d-f)   The mean total OHC loss for all animals exposed to a single impulse falling within 5 dB bins of the indicated level of the hazard index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 7. (r^2 = coefficient of determination)
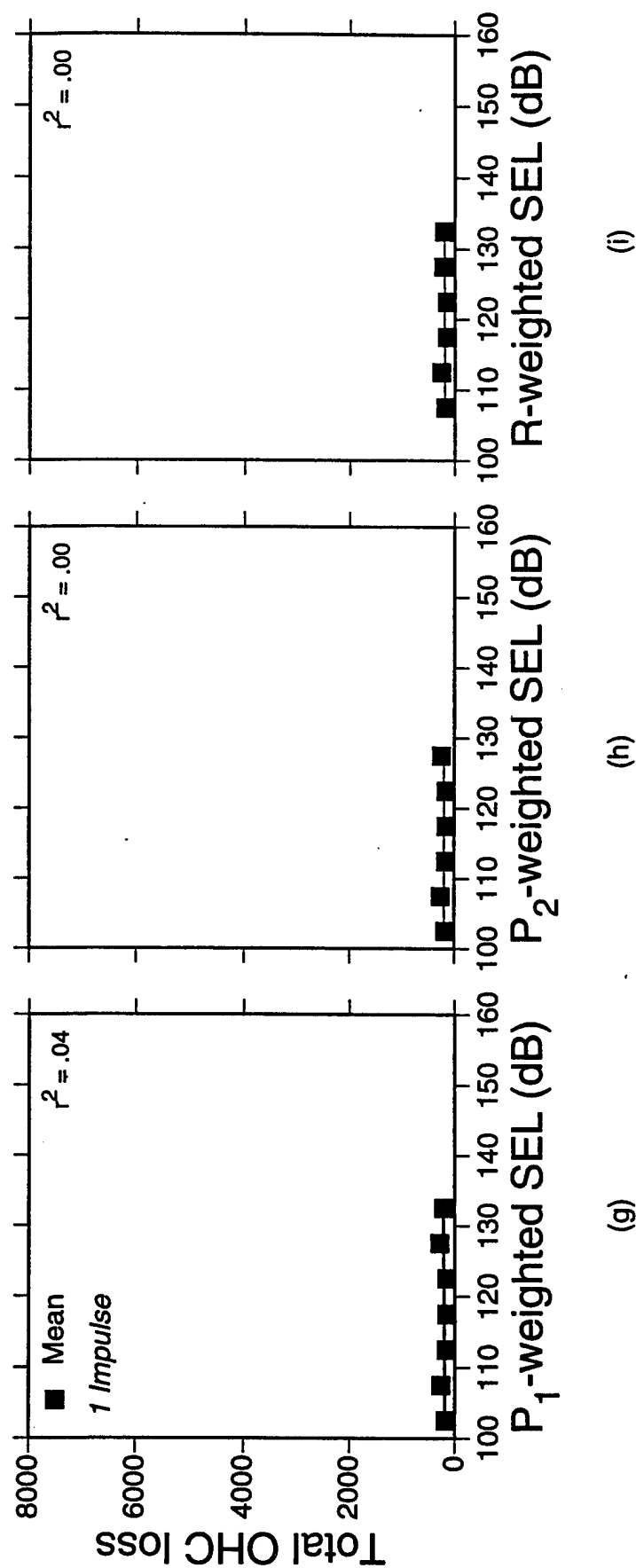
Figure 29 (g-i)   The mean total OHC loss for all animals exposed to a single impulse falling within 5 dB bins of the indicated level of the hazard index (g) P_1-weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the data.   The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 7. (r^2 = coefficient of determination)
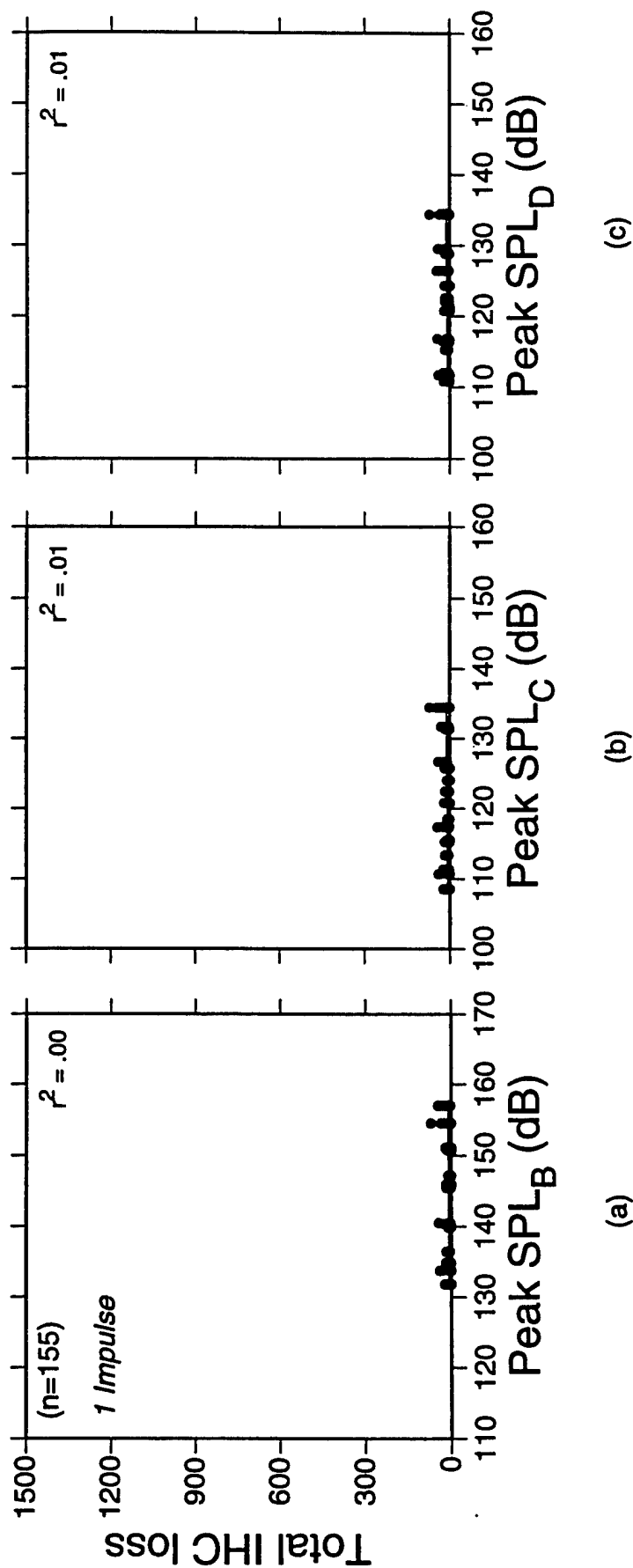
Figure 30 (a-c) Total IHC loss in the cochlea of each animal exposed to a single impulse (n=155) at the indicated level

of the hazard index (a) Peak SPL$_B$, (b) Peak SPL$_C$, and (c) Peak SPL$_D$. The solid line is the nonlinear

regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20)

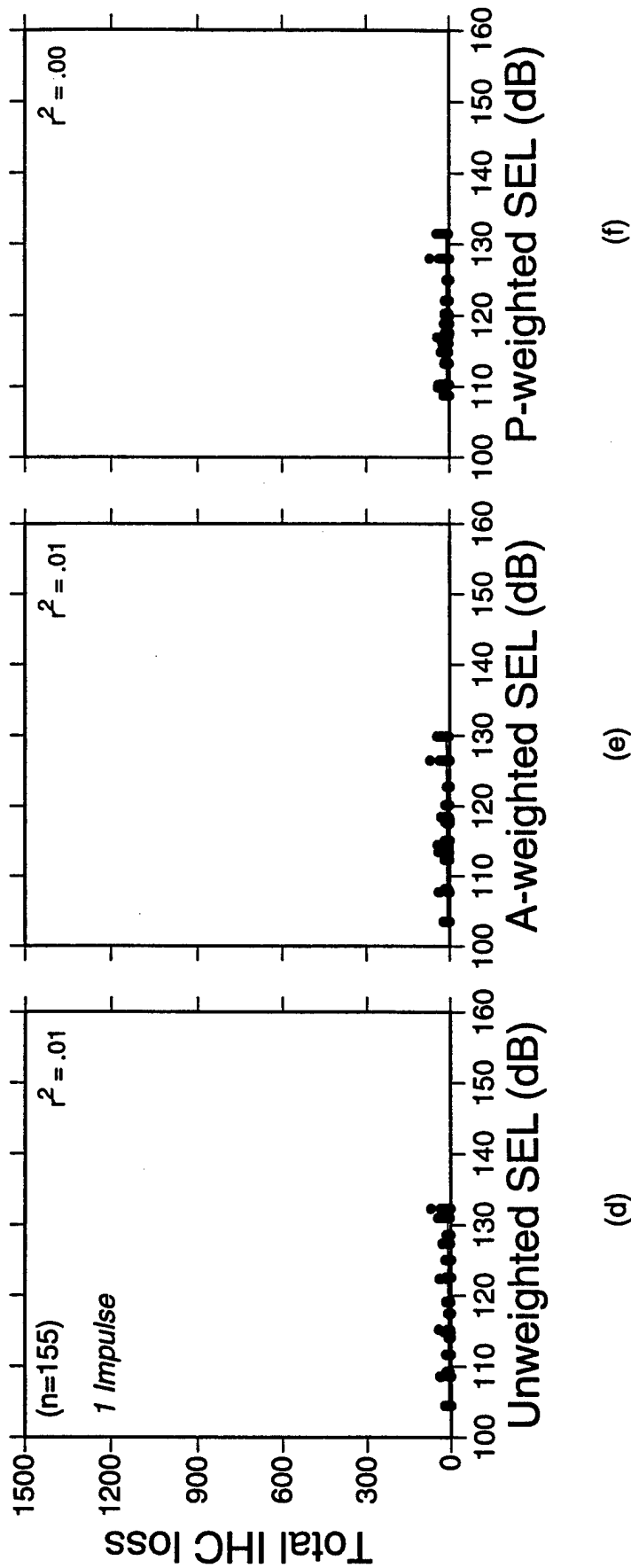corresponding to each regression line are listed in Table 8. (r^2 = coefficient of determination)

Figure 30 (d-f) Total IHC loss in the cochlea of each animal exposed to a single impulse (n=155) at the indicated level

of the hazard index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL. The solid line is

the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of

Equation (20) corresponding to each regression line are listed in Table 8. (r^2 = coefficient of
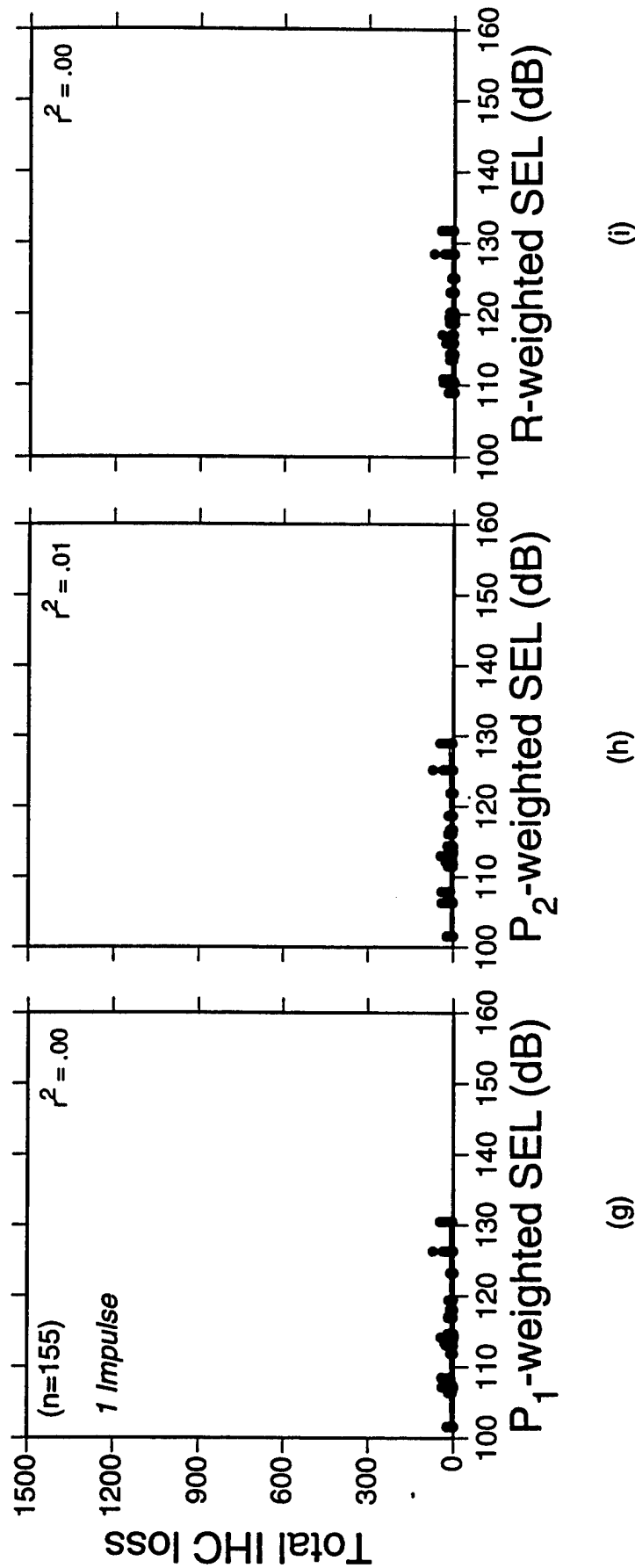
determination)

Figure 30 (g-i)   Total IHC loss in the cochlea of each animal exposed to a single impulse (n=155) at the indicated level

of the hazard index (g) P$_1$-weighted SEL, (h) P$_2$-weighted SEL, and (i) R-weighted SEL.   The solid line

is the nonlinear regression fit of Equation (20) to the data.   The three parameters, A, B, and C of

Equation (20) corresponding to each regression line are listed in Table 8.   (r^2 = coefficient of
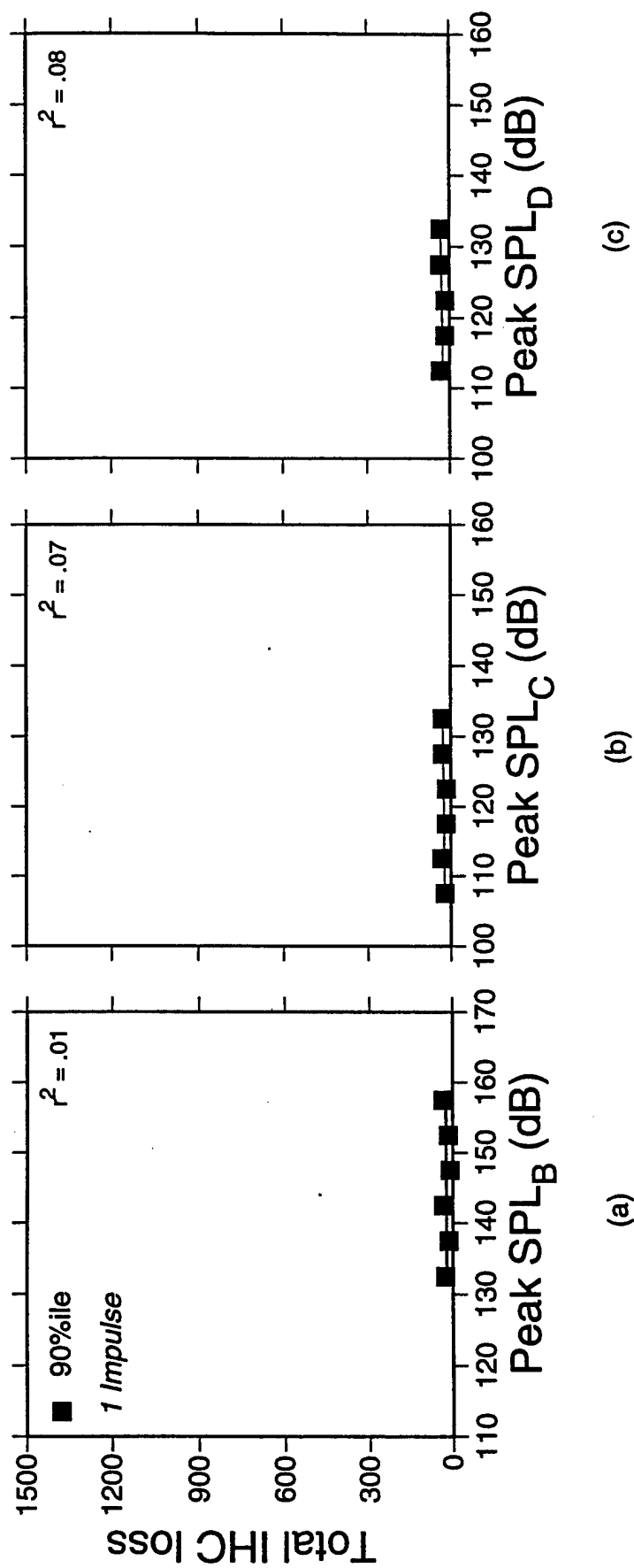
determination)

Figure 31 (a-c) The 90th percentile total IHC loss for all animals exposed to a single impulse falling within 5 dB bins of the indicated level of the hazard index (a) Peak SPL_B, (b) Peak SPL_C, and (c) Peak SPL_D. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 8. (r^2 = coefficient of determination)
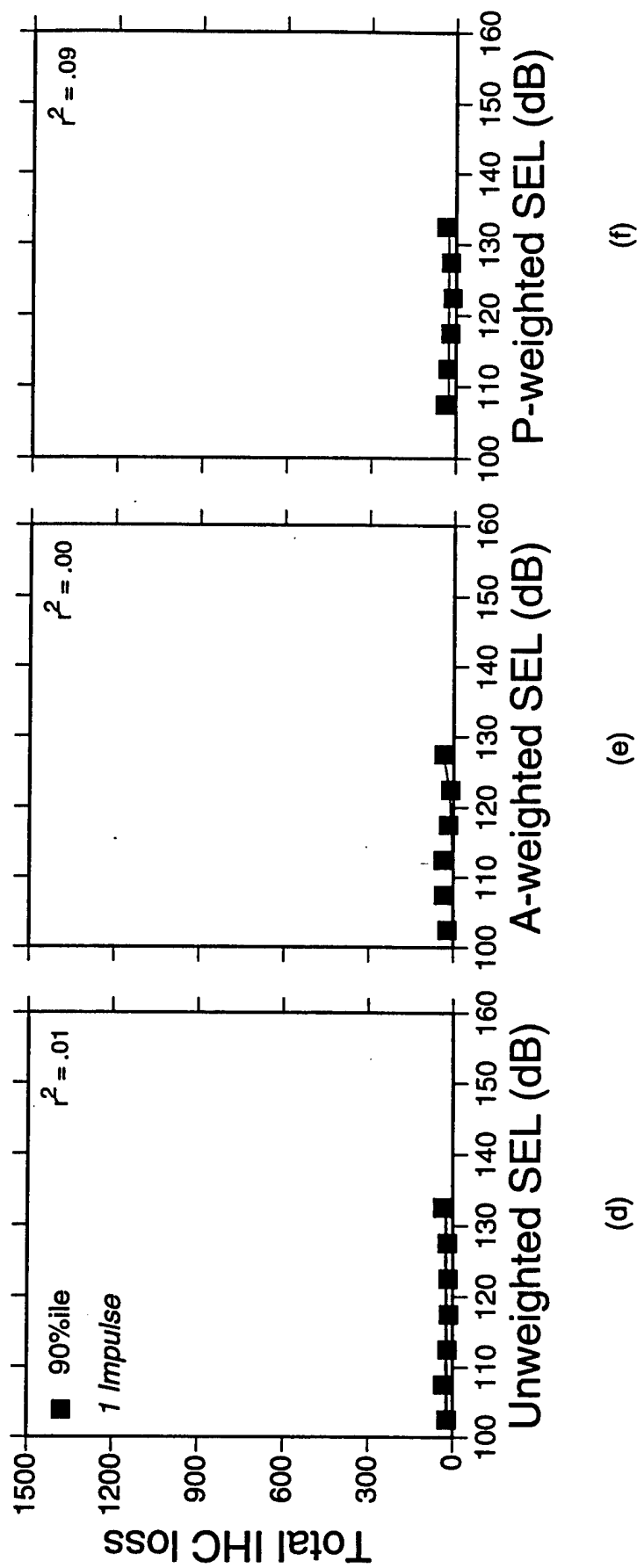
Total IHC loss

1500
1200
900
600
300
0

■ 90%ile
1 Impulse

$r^2 = .01$

100 110 120 130 140 150 160
Unweighted SEL (dB)

(d)

$r^2 = .00$

100 110 120 130 140 150 160
A-weighted SEL (dB)

(e)

$r^2 = .09$

100 110 120 130 140 150 160
P-weighted SEL (dB)

(f)

Figure 31 (d-f)   The 90th percentile total IHC loss for all animals exposed to a single impulse falling within 5 dB bins

of the indicated level of the hazard index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-

weighted SEL.   The solid line is the nonlinear regression fit of Equation (20) to the data.   The three

parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table
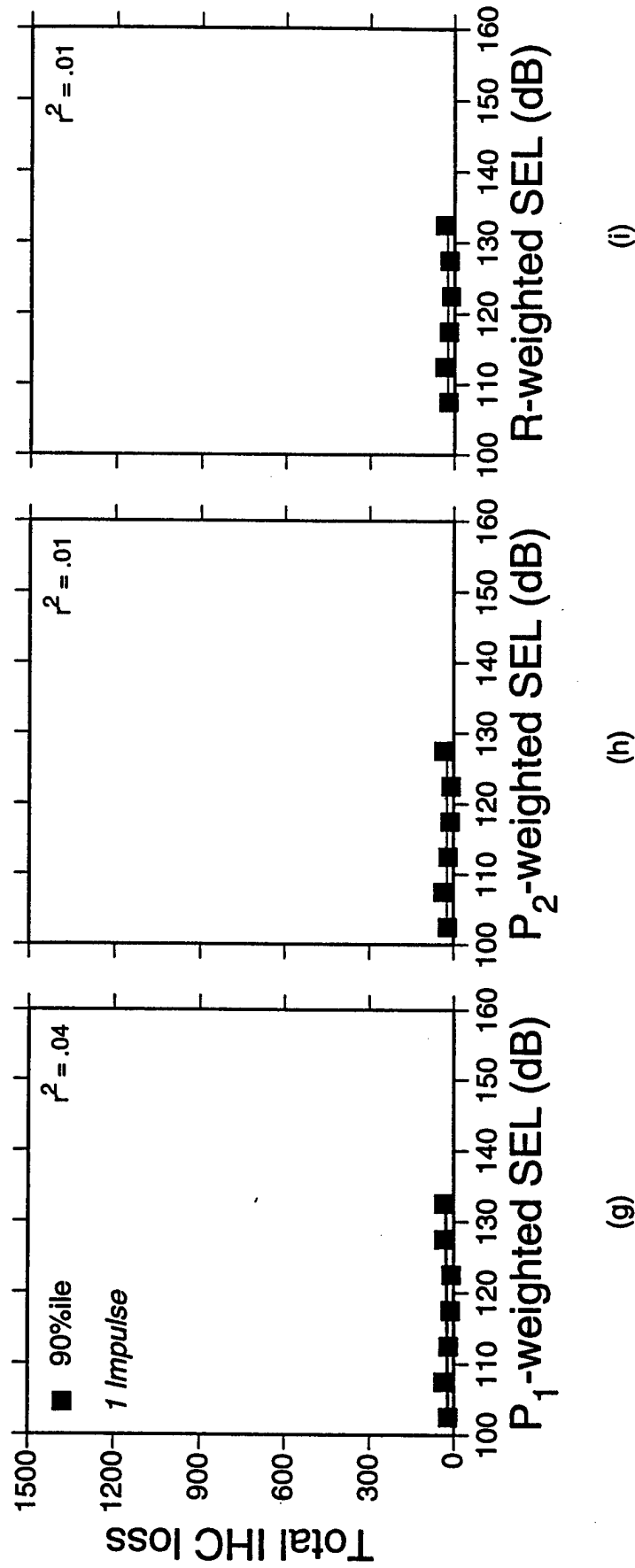
8. (r^2 = coefficient of determination)

Figure 31 (g-i)   The 90th percentile total IHC loss for all animals exposed to a single impulse falling within 5 dB bins

of the indicated level of the hazard index (g) P_1-weighted SEL, (h) P_2-weighted SEL, and (i) R-

weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the data. The three

parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table

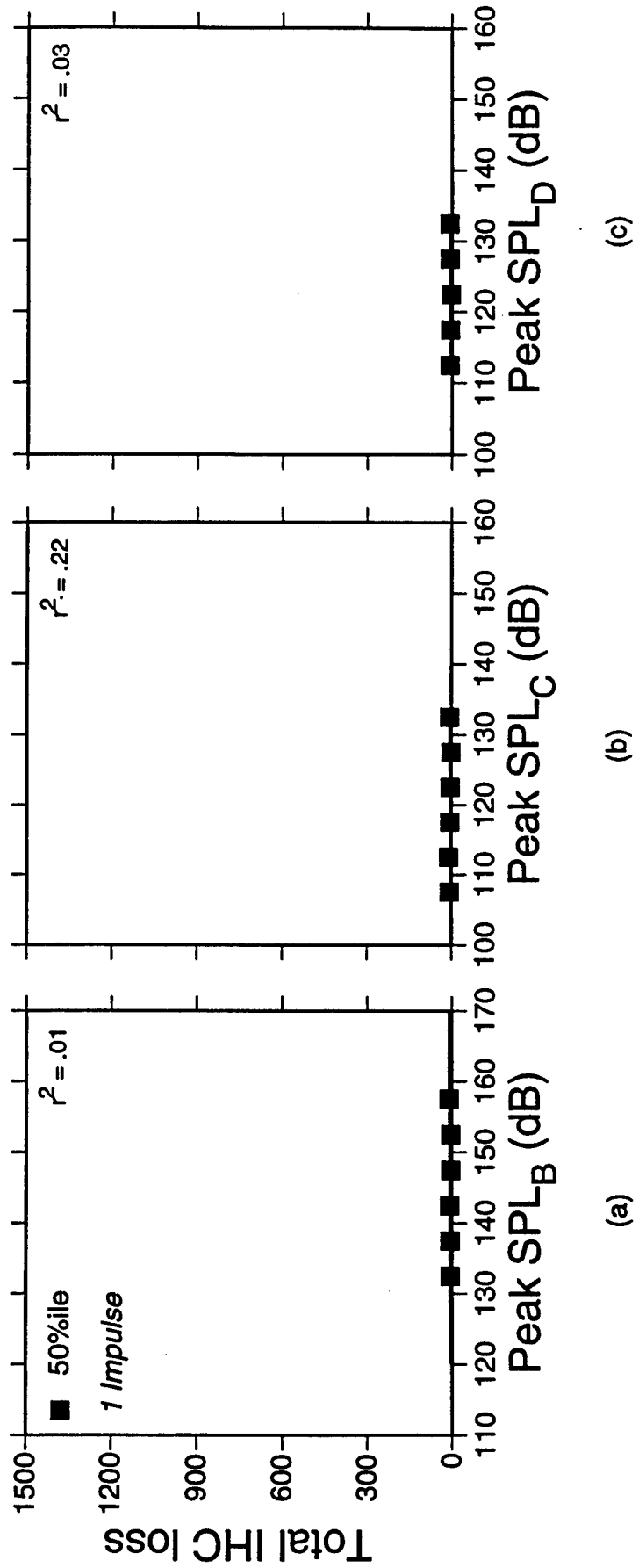8. (r^2 = coefficient of determination)

Figure 32 (a-c) The 50th percentile total IHC loss for all animals exposed to a single impulse falling within 5 dB bins of the indicated level of the hazard index (a) Peak SPL_B, (b) Peak SPL_C, and (c) Peak SPL_D. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 8. (r^2 = coefficient of determination)
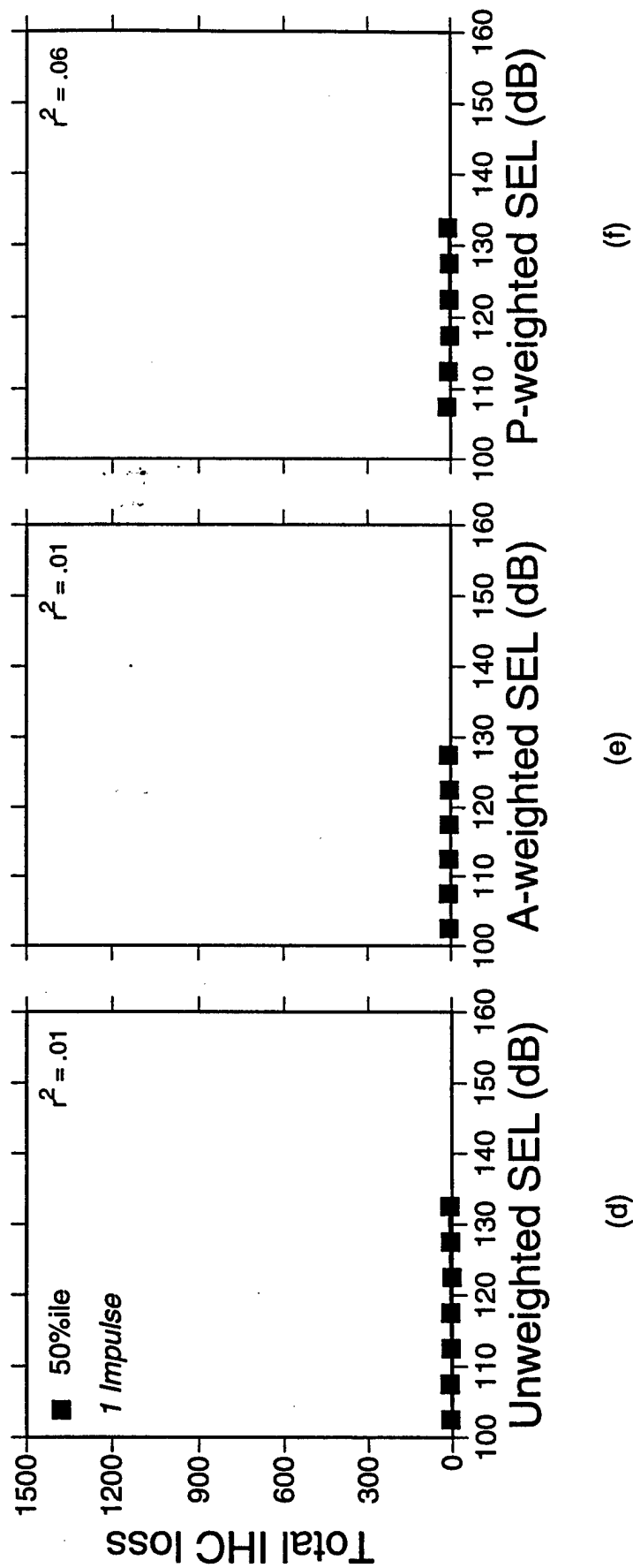
Figure 32 (d-f)   The 50th percentile total IHC loss for all animals exposed to a single impulse falling within 5 dB bins of the indicated level of the hazard index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 8. (r^2 = coefficient of determination)
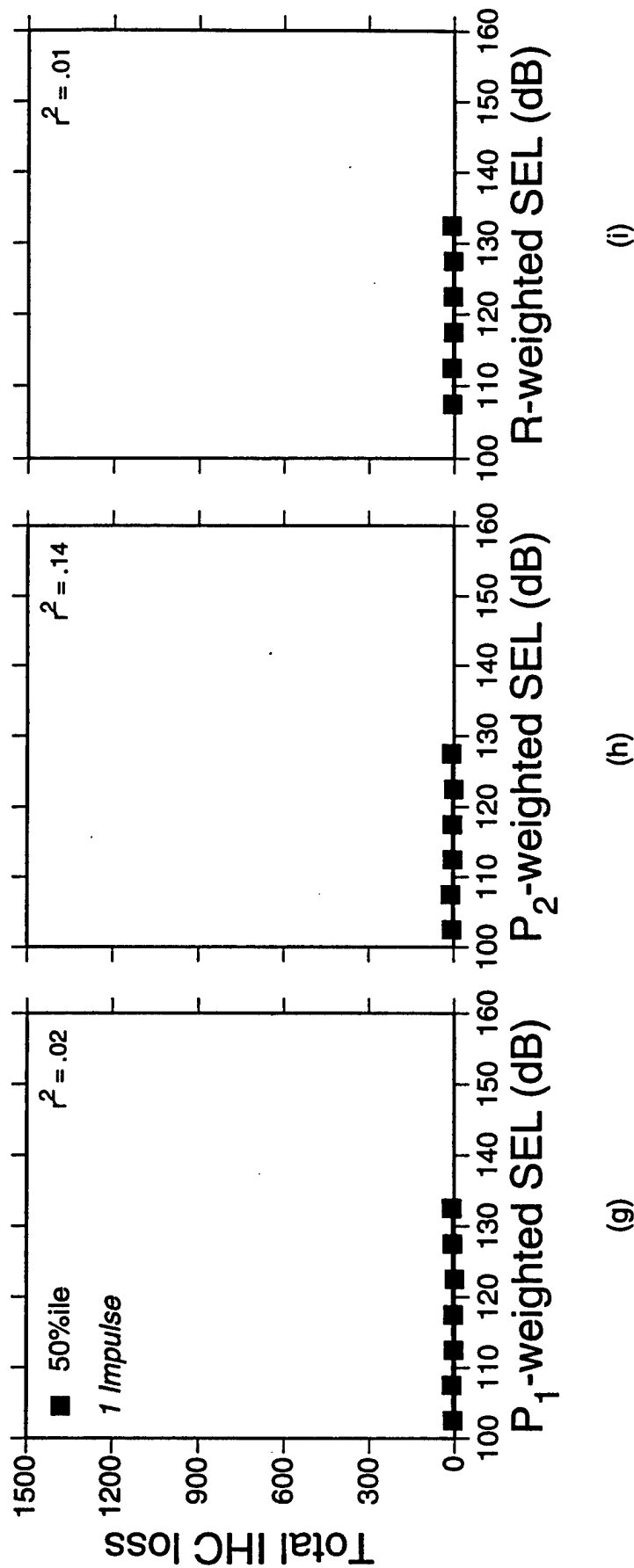
Figure 32 (g-i) The 50th percentile total IHC loss for all animals exposed to a single impulse falling within 5 dB bins of the indicated level of the hazard index (g) P_1-weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 8. (r^2 = coefficient of determination)
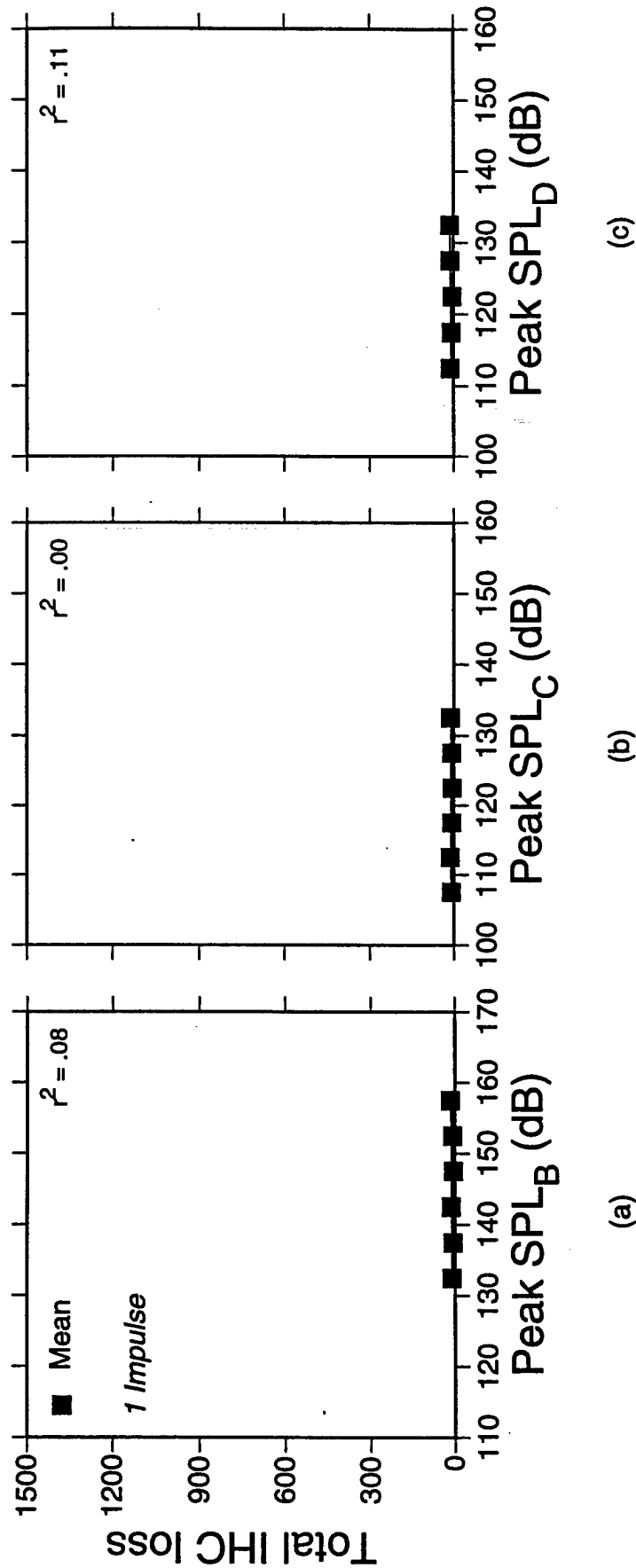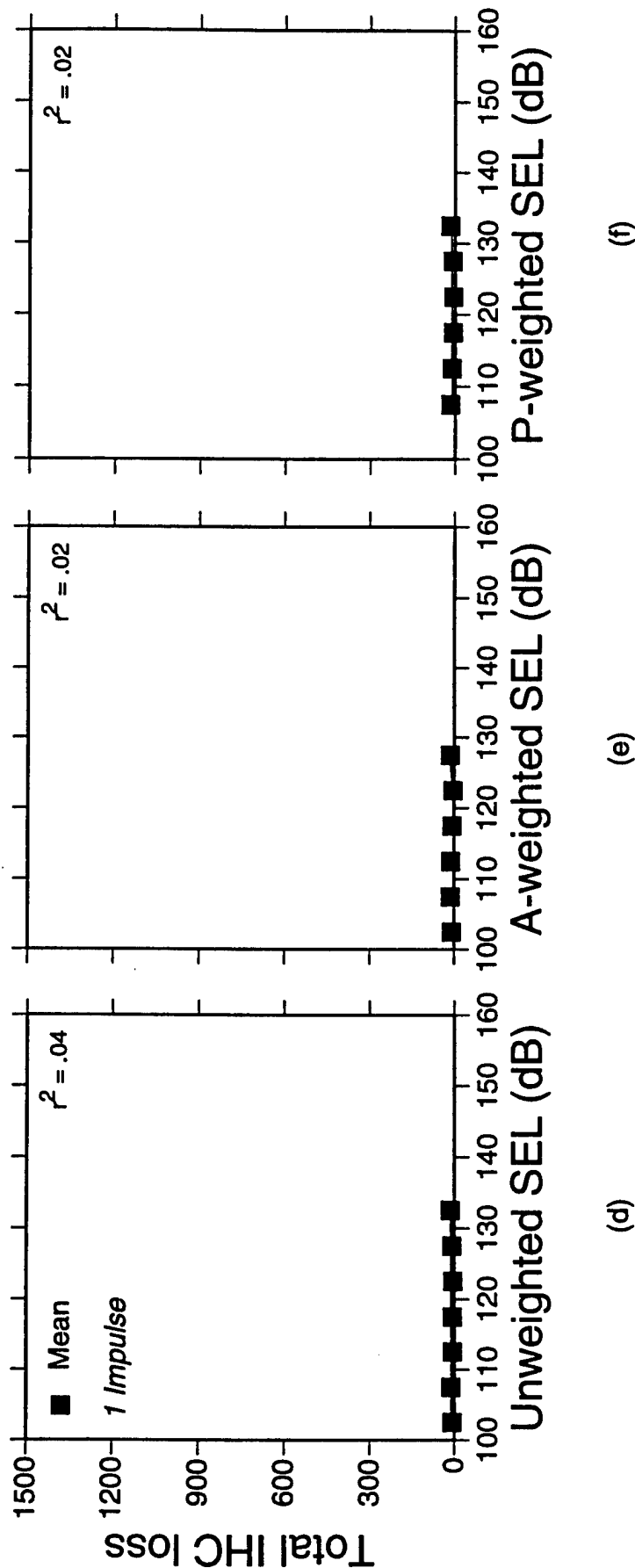
Figure 33 (a-c) The mean total IHC loss for all animals exposed to a single impulse falling within 5 dB bins of the indicated level of the hazard index (a) Peak SPL$_B$, (b) Peak SPL$_C$, and (c) Peak SPL$_D$. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 8. (r^2 = coefficient of determination)
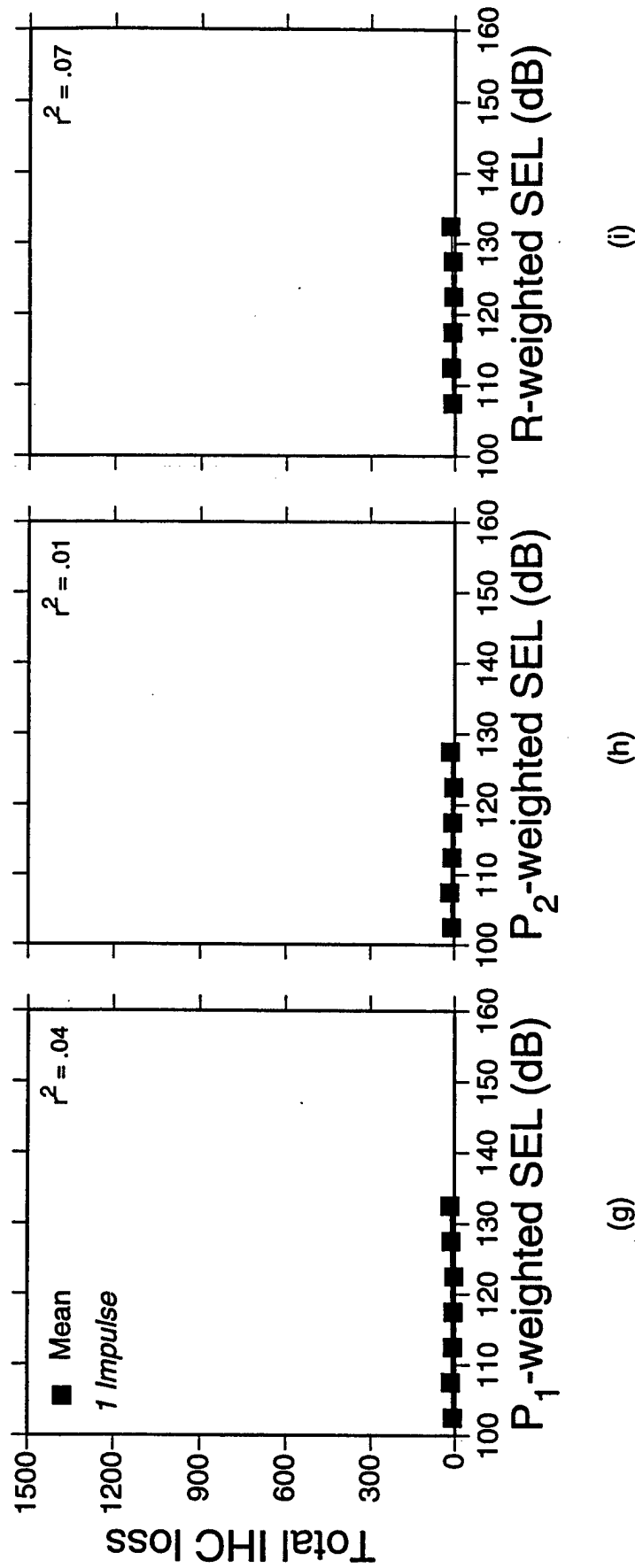
Figure 33 (d-f)   The mean total IHC loss for all animals exposed to a single impulse falling within 5 dB bins of the

indicated level of the hazard index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted

SEL.   The solid line is the nonlinear regression fit of Equation (20) to the data.   The three

parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table

8. (r^2 = coefficient of determination)

Figure 33 (g-i) The mean total IHC loss for all animals exposed to a single impulse falling within 5 dB bins of the indicated level of the hazard index (g) P_1-weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 8. (r^2 = coefficient of determination)
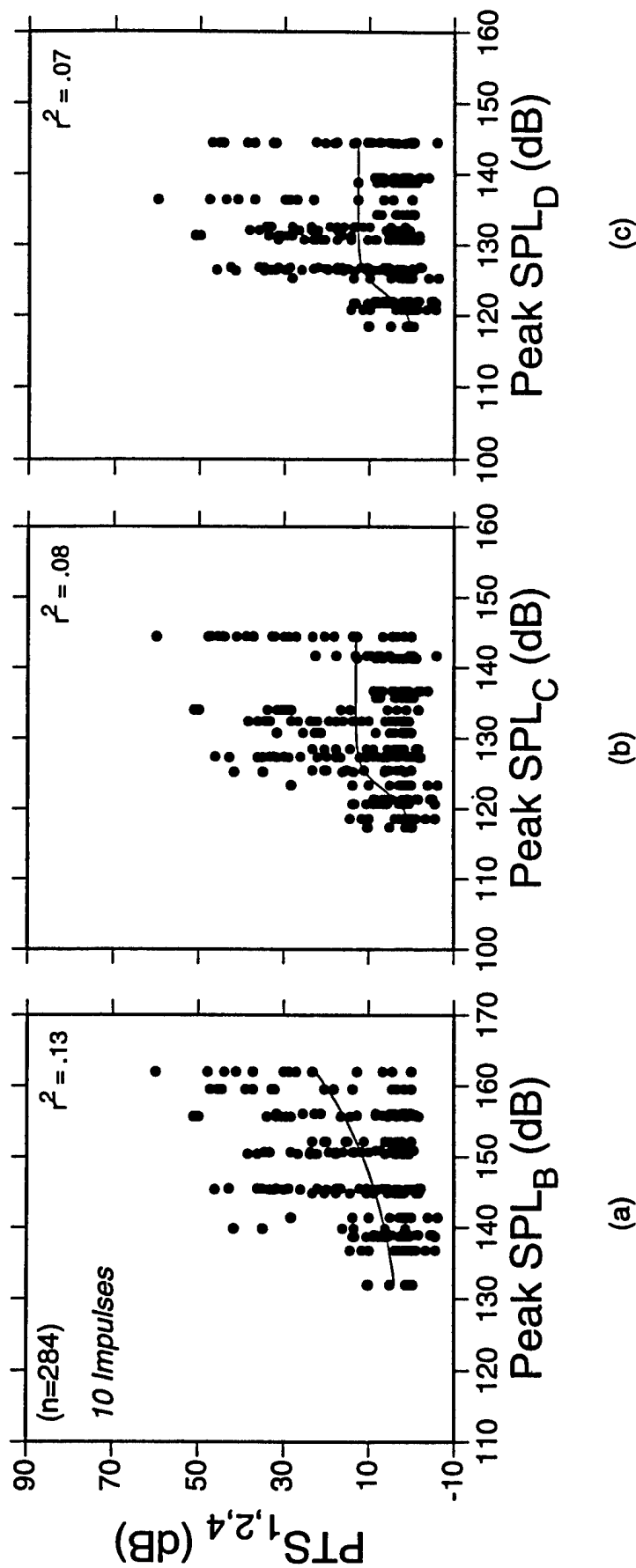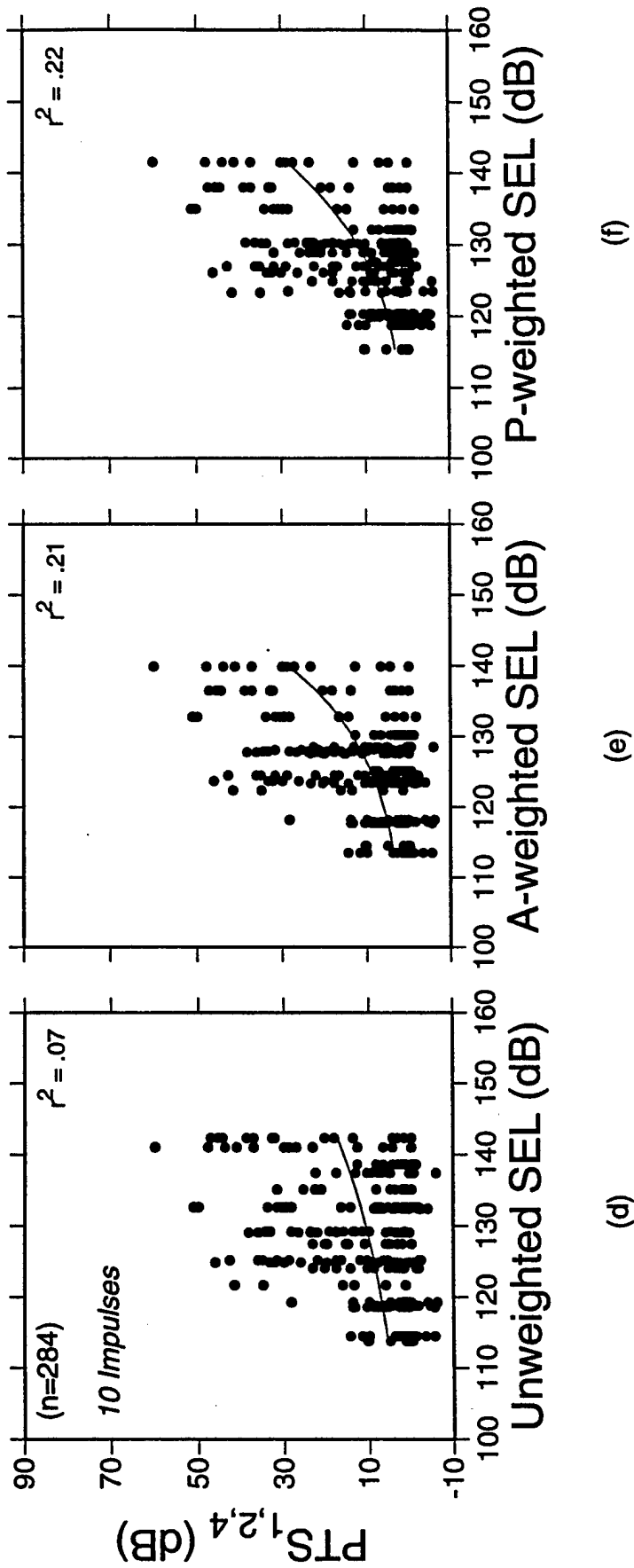
Figure 34 (a-c)   Average PTS measured at the 1, 2, and 4 kHz test frequencies of each animal exposed to 10 impulses (n=284) at the indicated level of the hazard index (a) Peak SPL_B, (b) Peak SPL_C, and (c) Peak SPL_D. The solid line is the nonlinear regression fit of Equation (20) to the data.   The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 9. (r^2 = coefficient of determination)
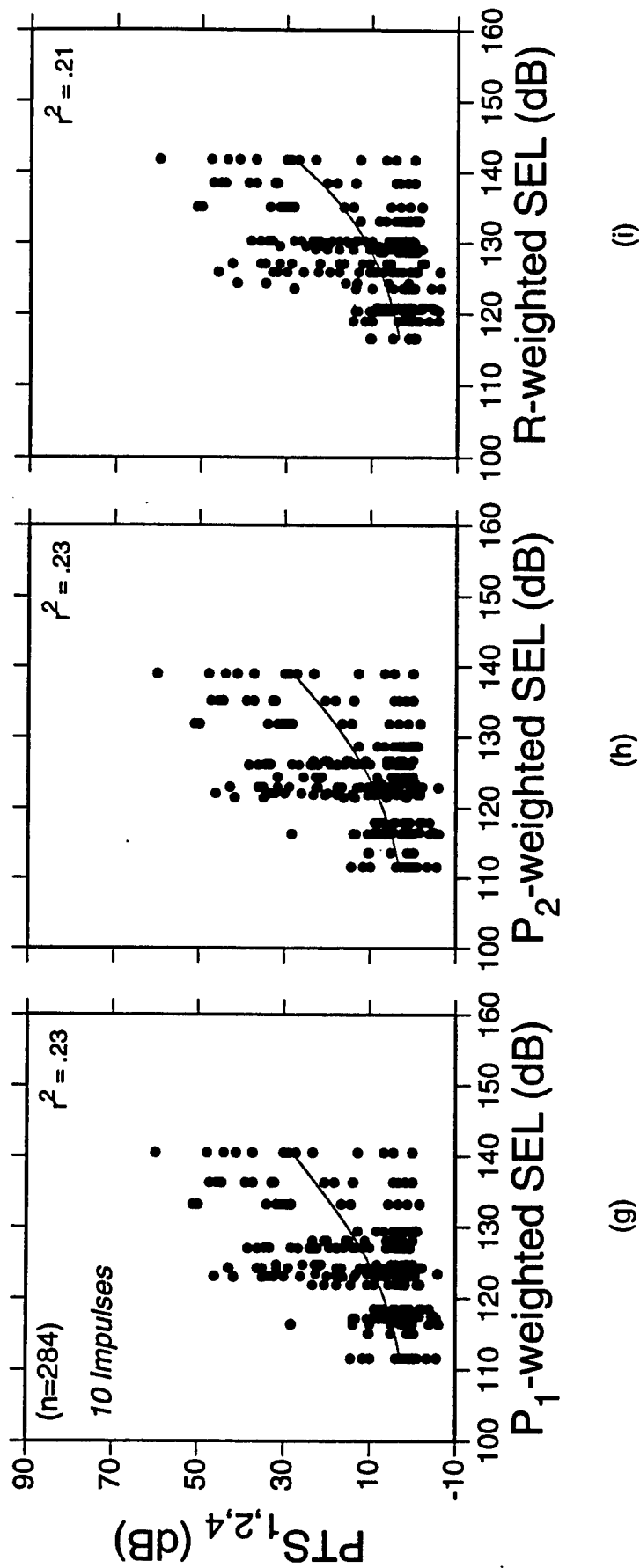
Figure 34 (d-f)   Average PTS measured at the 1, 2, and 4 kHz test frequencies of each animal exposed to 10 impulses (n=284) at the indicated level of the hazard index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL.   The solid line is the nonlinear regression fit of Equation (20) to the data.   The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 9.

(r^2 = coefficient of determination)

Figure 34 (g-i)   Average PTS measured at the 1, 2, and 4 kHz test frequencies of each animal exposed to 10 impulses (n=284) at the indicated level of the hazard index (g) P_1-weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 9.

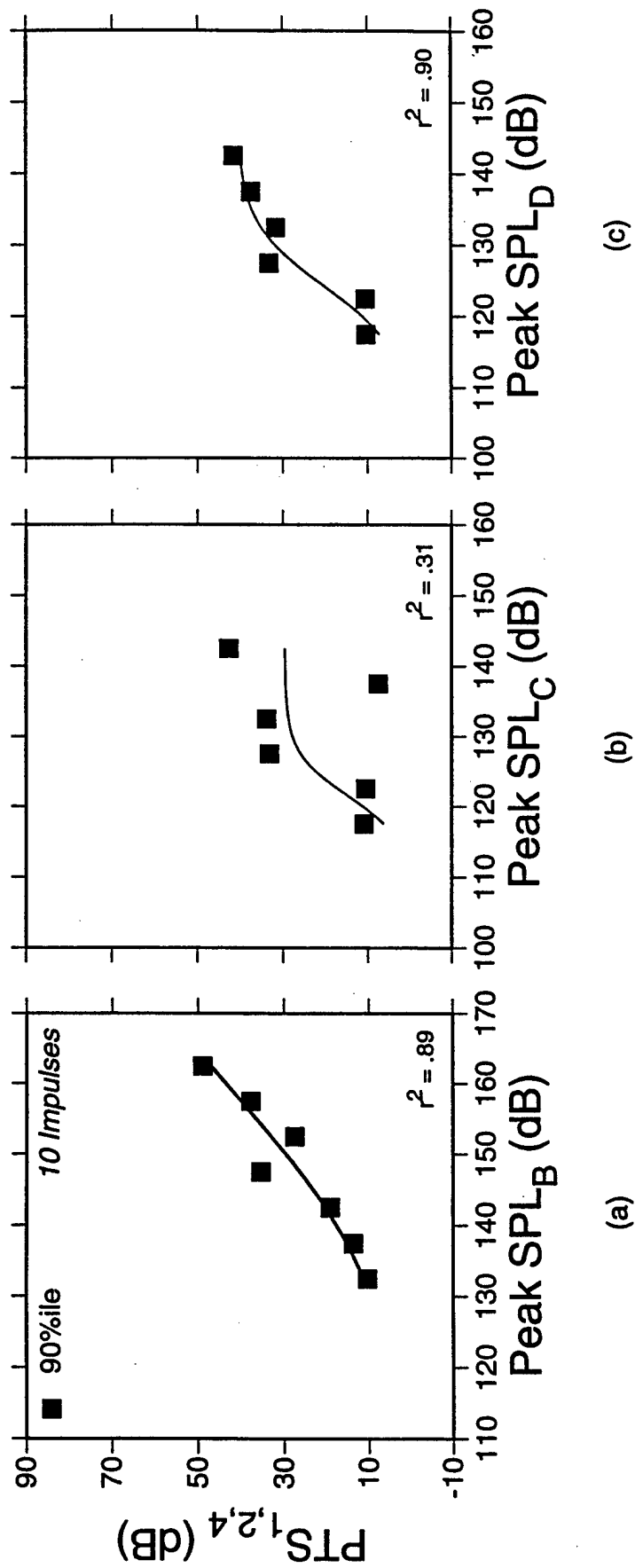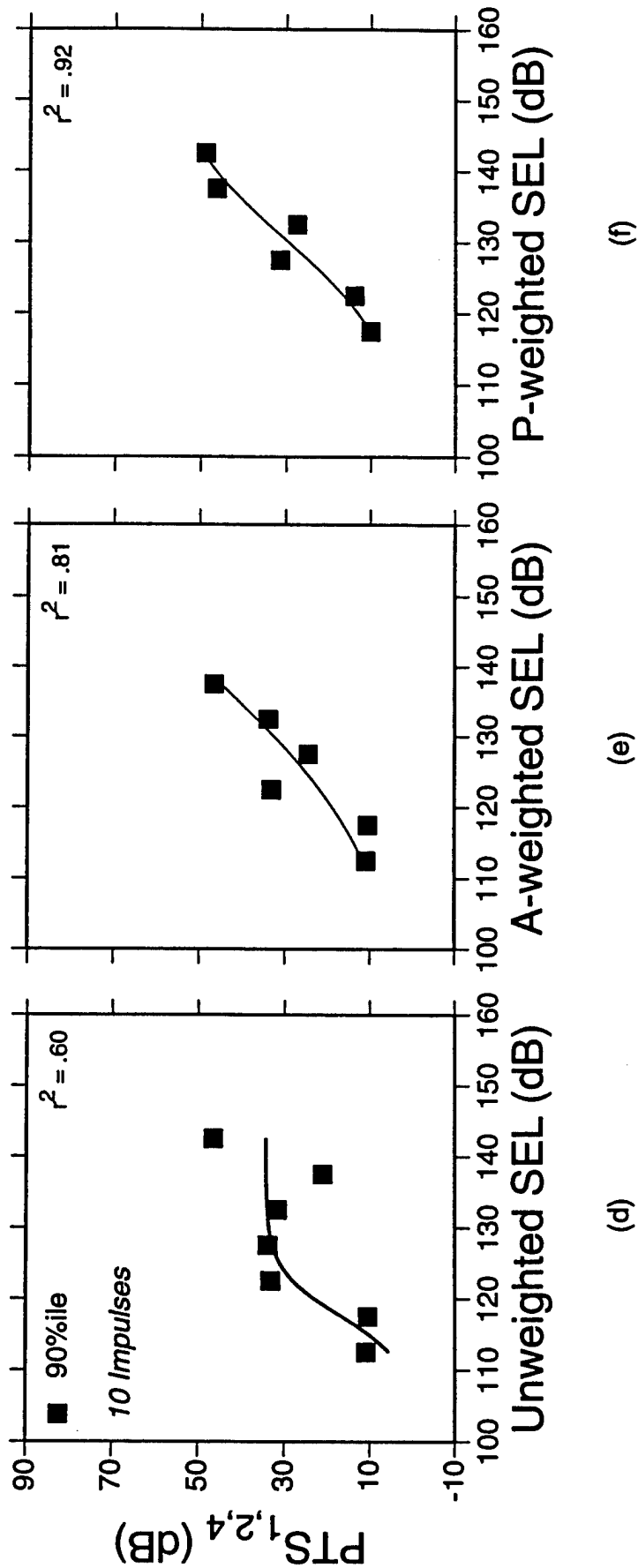(r^2 = coefficient of determination)

Figure 35 (a-c)   The 90th percentile average PTS measured at the 1, 2, and 4 kHz test frequencies for all animals exposed to 10 impulses falling within 5 dB bins of the indicated level of the hazard index (a) Peak SPL$_B$, (b) Peak SPL$_C$, and (c) Peak SPL$_D$. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 9. (r^2 = coefficient of determination)

Figure 35 (d-f) The 90th percentile average PTS measured at the 1, 2, and 4 kHz test frequencies for all animals exposed to 10 impulses falling within 5 dB bins of the indicated level of the hazard index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 9. (r^2 = coefficient of determination)
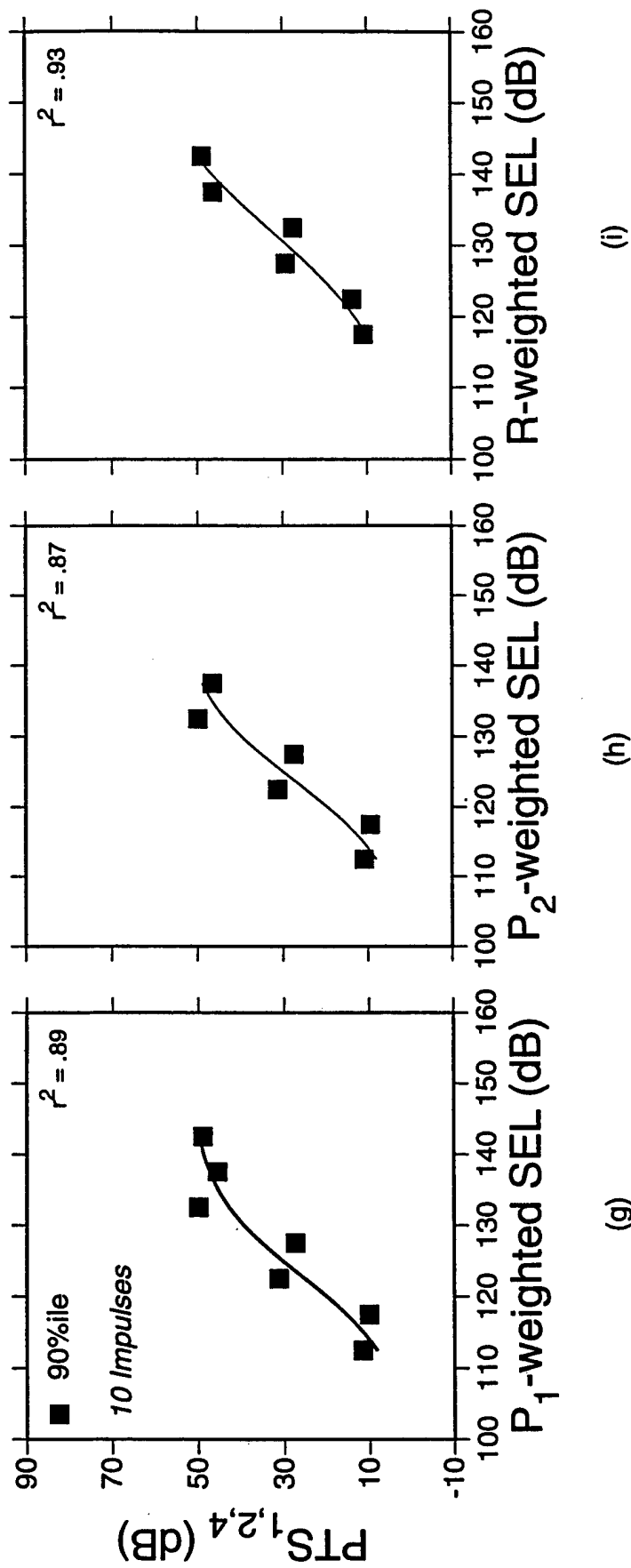
Figure 35 (g-i)   The 90th percentile average PTS measured at the 1, 2, and 4 kHz test frequencies for all animals exposed to 10 impulses falling within 5 dB bins of the indicated level of the hazard index (g) P_1-weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL.   The solid line is the nonlinear regression fit of Equation (20) to the data.   The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 9. (r^2 = coefficient of determination)
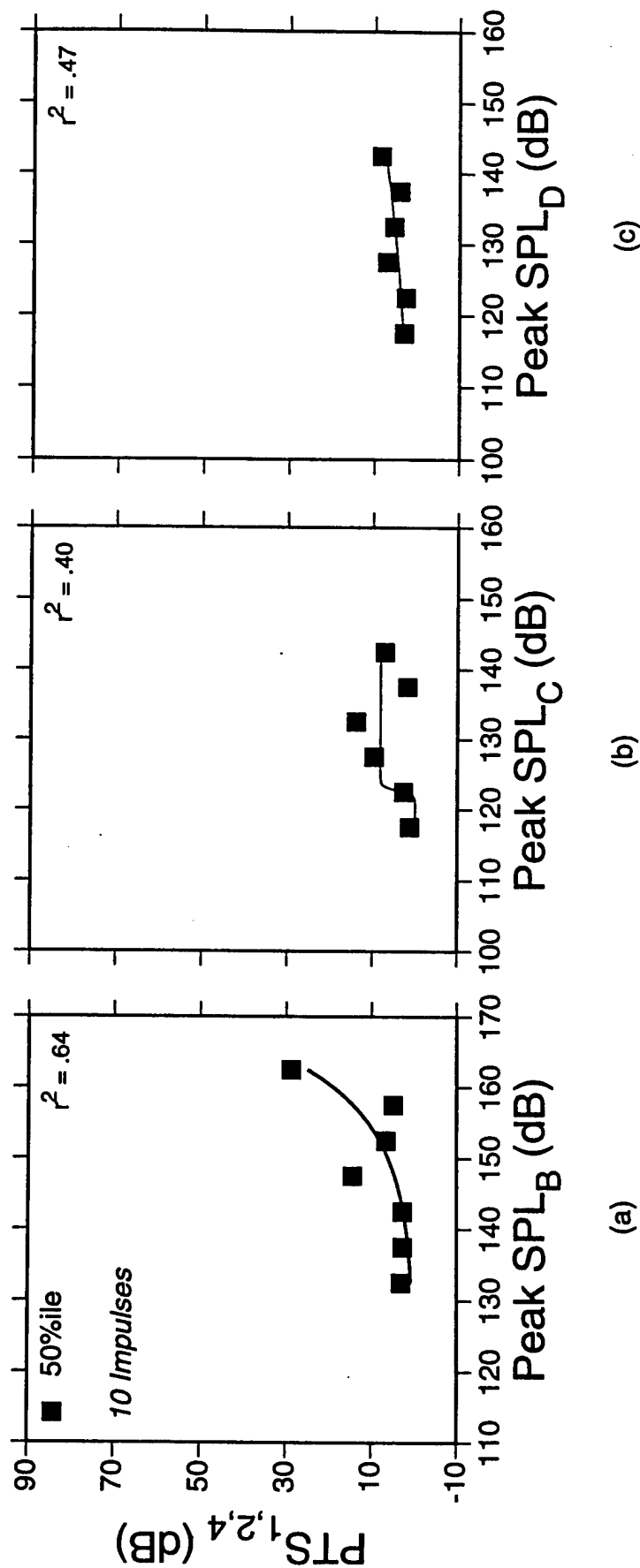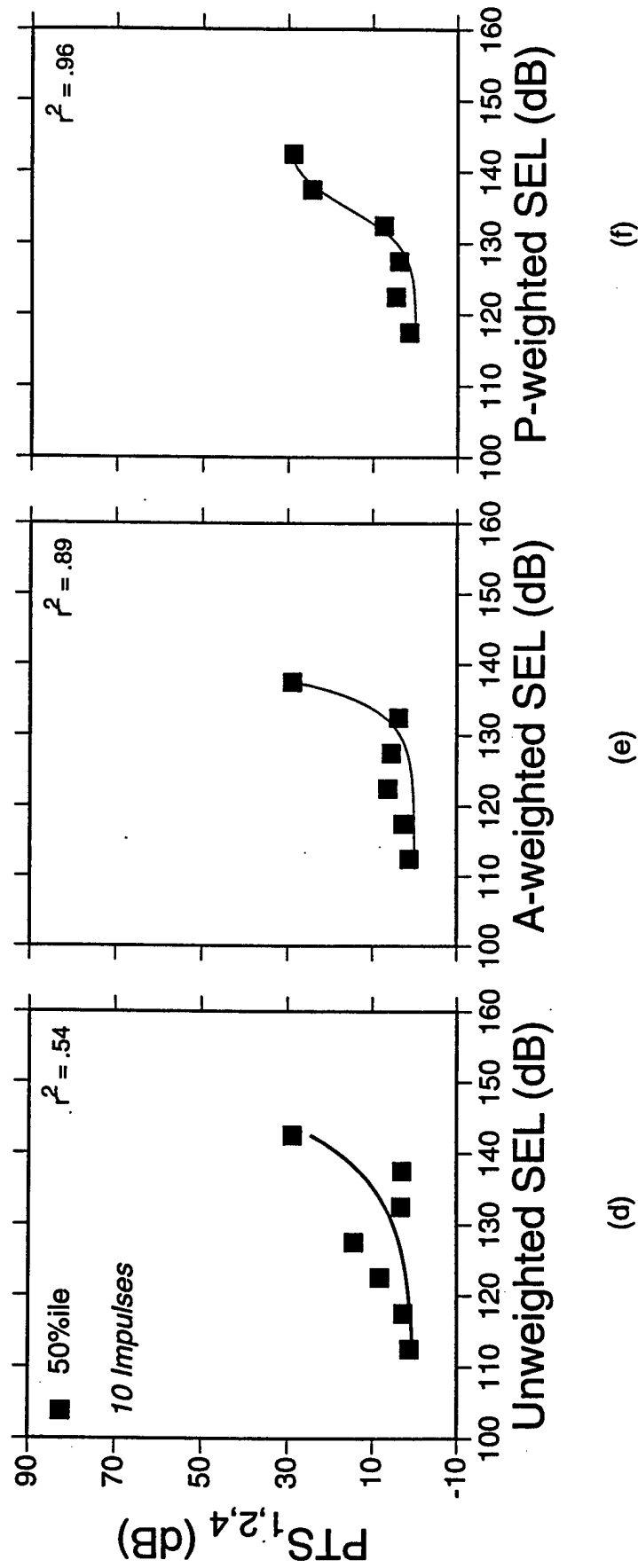
Figure 36 (a-c) The 50th percentile average PTS measured at the 1, 2, and 4 kHz test frequencies for all animals exposed to 10 impulses falling within 5 dB bins of the indicated level of the hazard index (a) Peak SPL_B, (b) Peak SPL_C, and (c) Peak SPL_D. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 9. (r^2 = coefficient of determination)

Figure 36 (d-f)   The 50th percentile average PTS measured at the 1, 2, and 4 kHz test frequencies for all animals

exposed to 10 impulses falling within 5 dB bins of the indicated level of the hazard index (d)

Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL. The solid line is the nonlinear

regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20)

corresponding to each regression line are listed in Table 9. (r^2 = coefficient of determination)
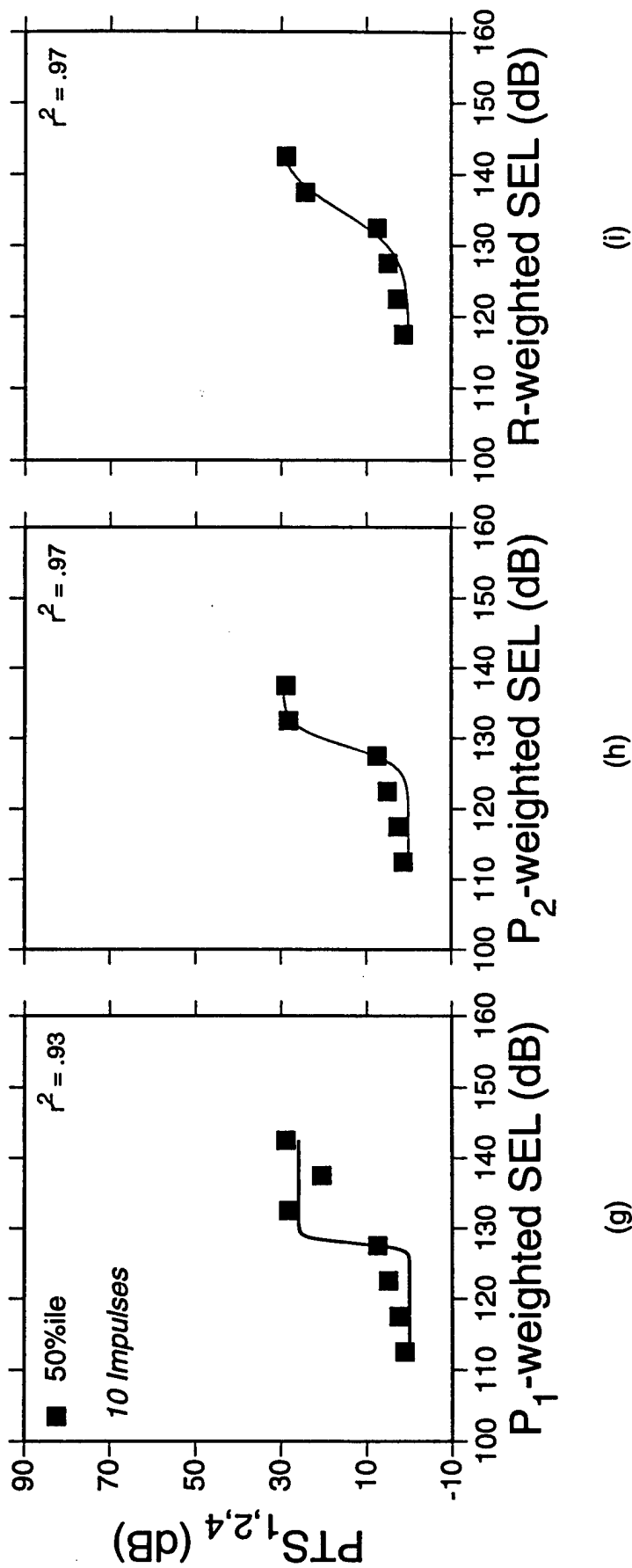
Figure 36 (g-i)   The 50th percentile average PTS measured at the 1, 2, and 4 kHz test frequencies for all animals exposed to 10 impulses falling within 5 dB bins of the indicated level of the hazard index (g) P_1-weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 9. (r^2 = coefficient of determination)
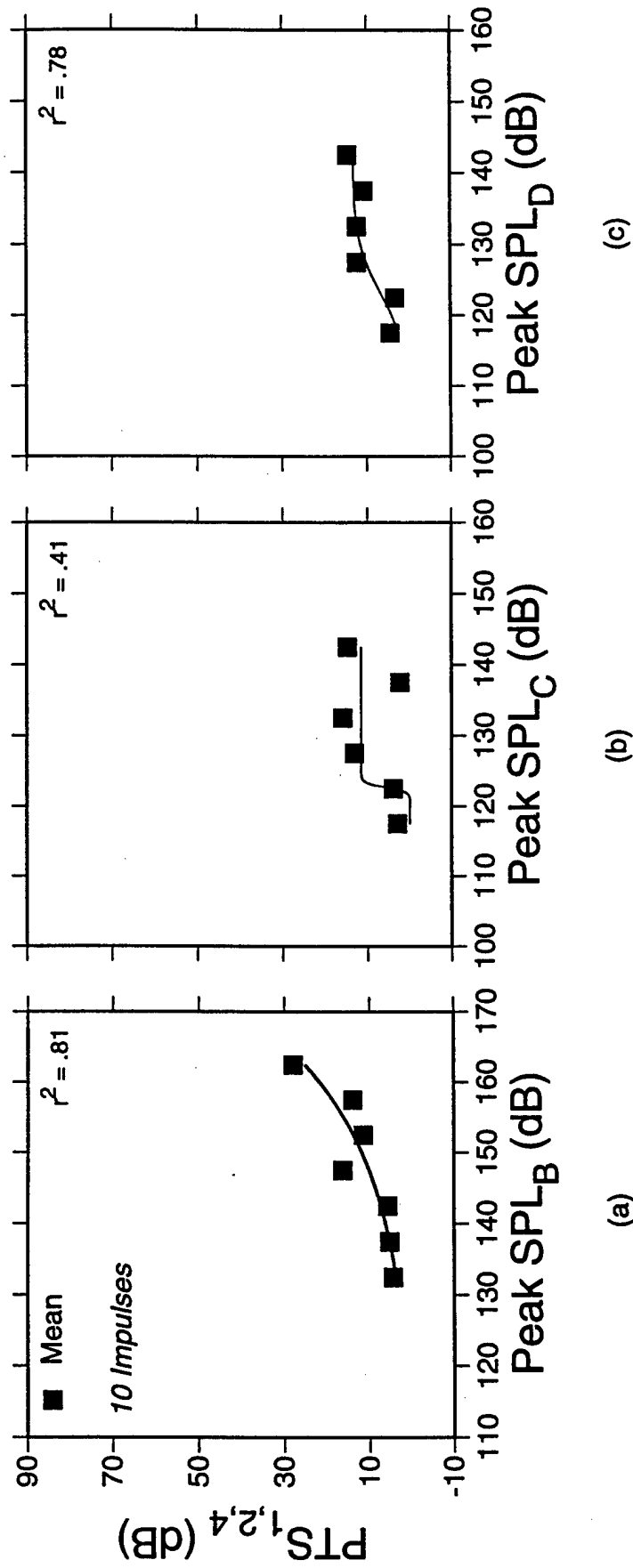
Figure 37 (a-c) The mean average PTS measured at the 1, 2, and 4 kHz test frequencies for all animals exposed to 10 impulses falling within 5 dB bins of the indicated level of the hazard index (a) Peak SPL_B, (b) Peak SPL_C, and (c) Peak SPL_D. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 9. (r^2 = coefficient of determination)
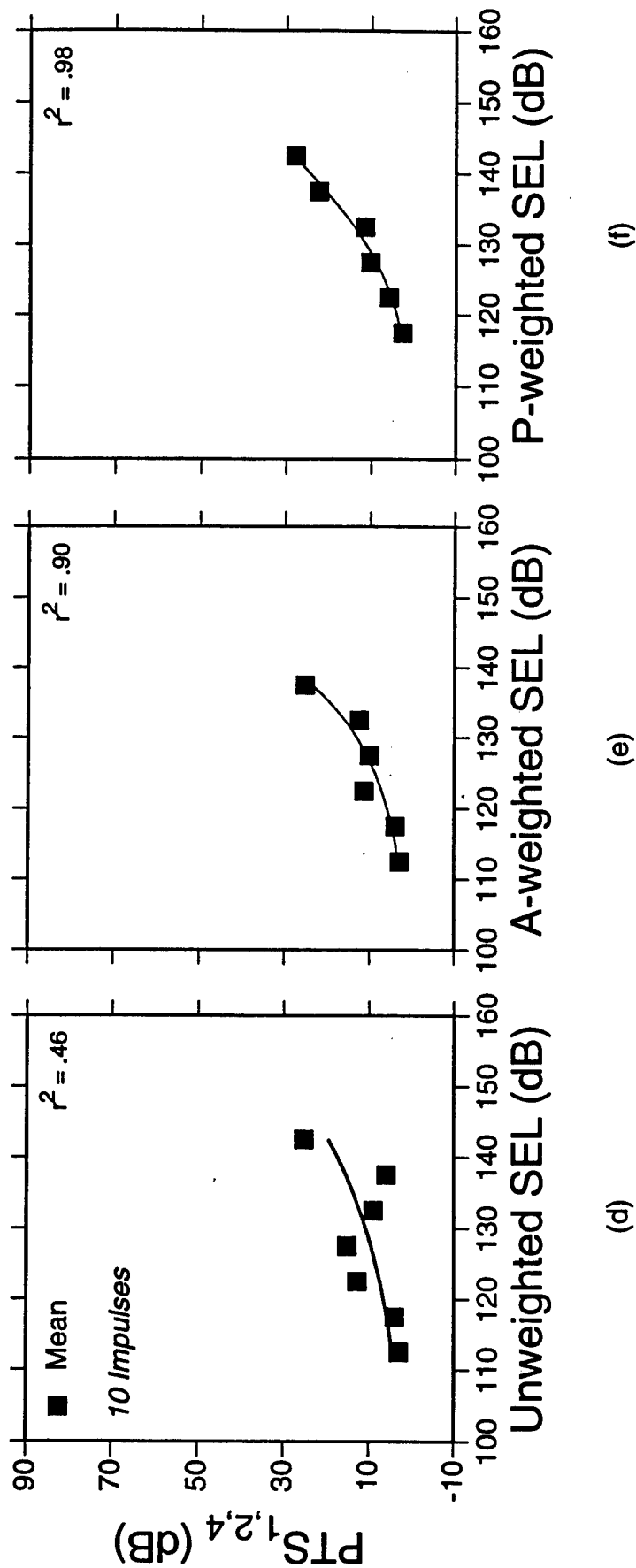
Figure 37 (d-f)   The mean average PTS measured at the 1, 2, and 4 kHz test frequencies for all animals exposed to 10

impulses falling within 5 dB bins of the indicated level of the hazard index (d) Unweighted SEL, (e) A-

weighted SEL, and (f) P-weighted SEL.   The solid line is the nonlinear regression fit of Equation (20) to

the data.   The three parameters, A, B, and C of Equation (20) corresponding to each regression line

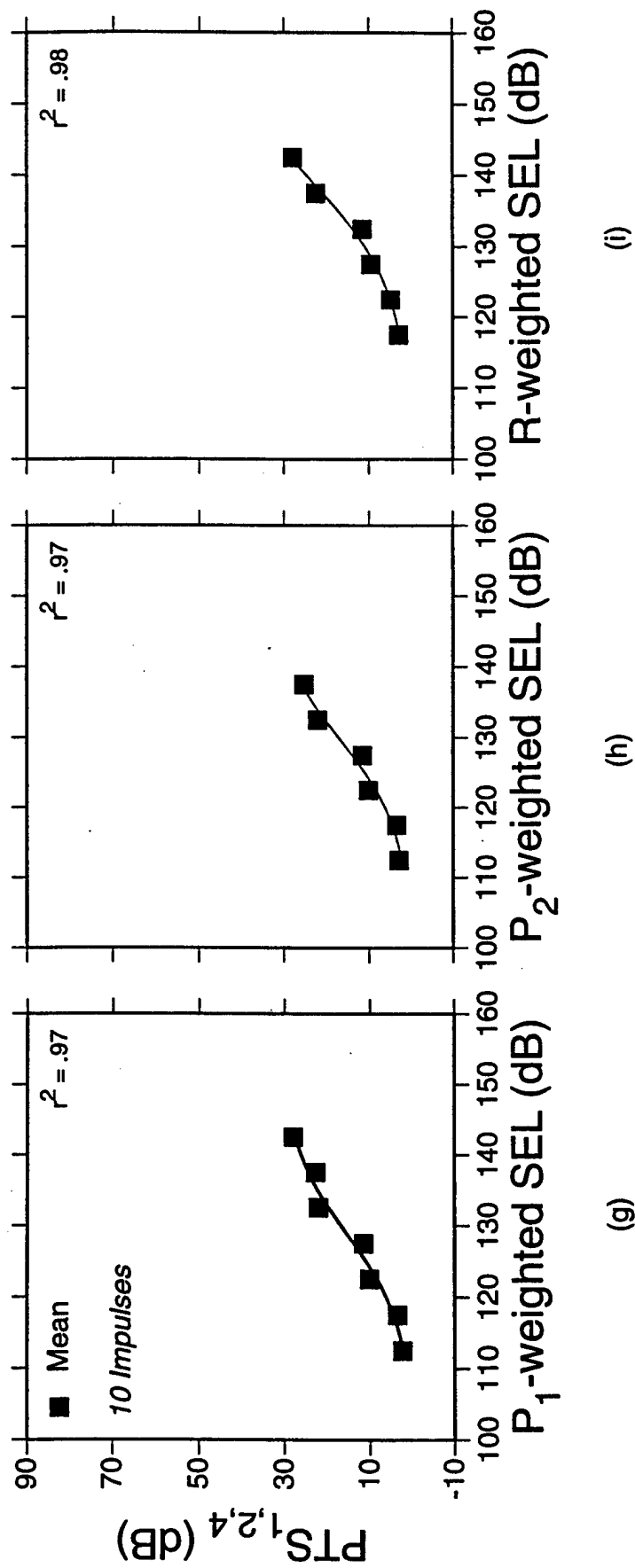are listed in Table 9. (r^2 = coefficient of determination)

Figure 37 (g-i)   The mean average PTS measured at the 1, 2, and 4 kHz test frequencies for all animals exposed to 10 impulses falling within 5 dB bins of the indicated level of the hazard index (g) P_1-weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL.   The solid line is the nonlinear regression fit of Equation (20) to the data.   The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 9. (r^2 = coefficient of determination)
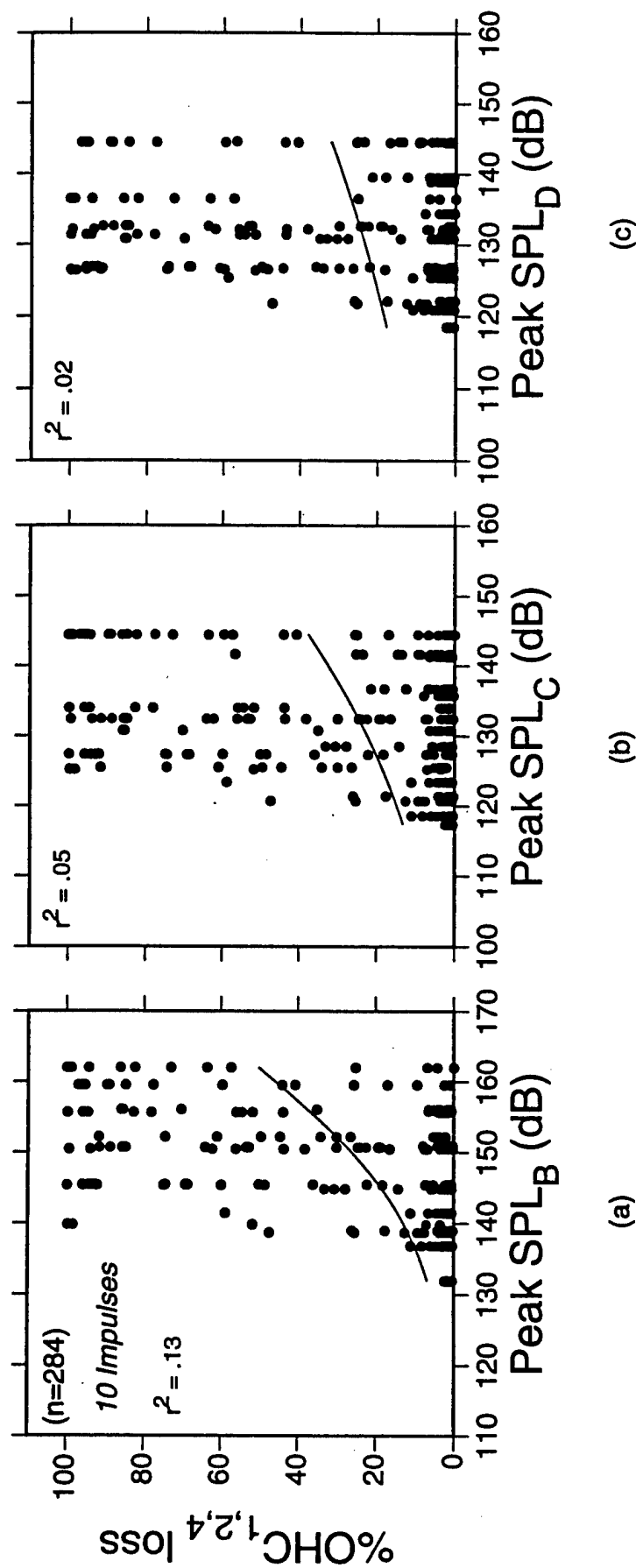
Figure 38 (a-c) The average percent OHC loss in the cochlea over octave-band lengths of the basilar membrane

centered at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for all

animals exposed to 10 impulses (n=284) at the indicated level of the hazard index (a) Peak SPL_B,

(b) Peak SPL_C, and (c) Peak SPL_D. The solid line is the nonlinear regression fit of Equation (20) to

the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line

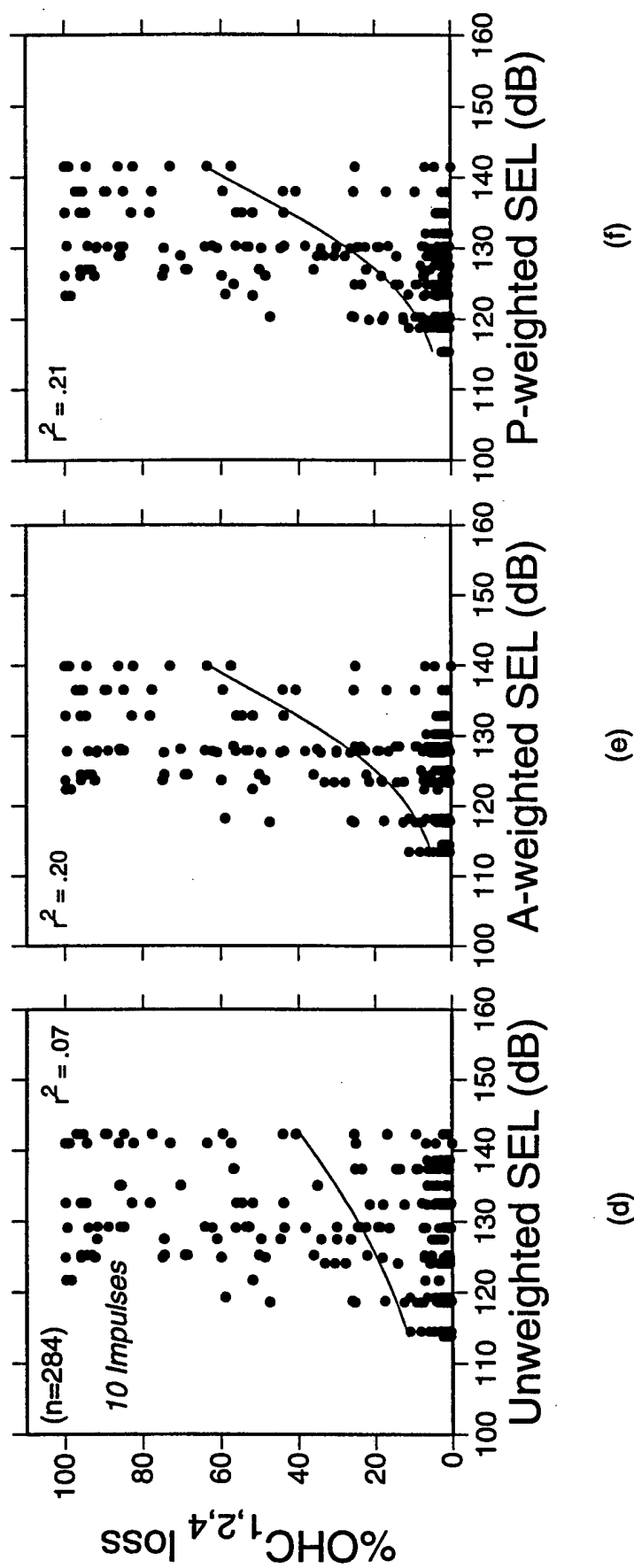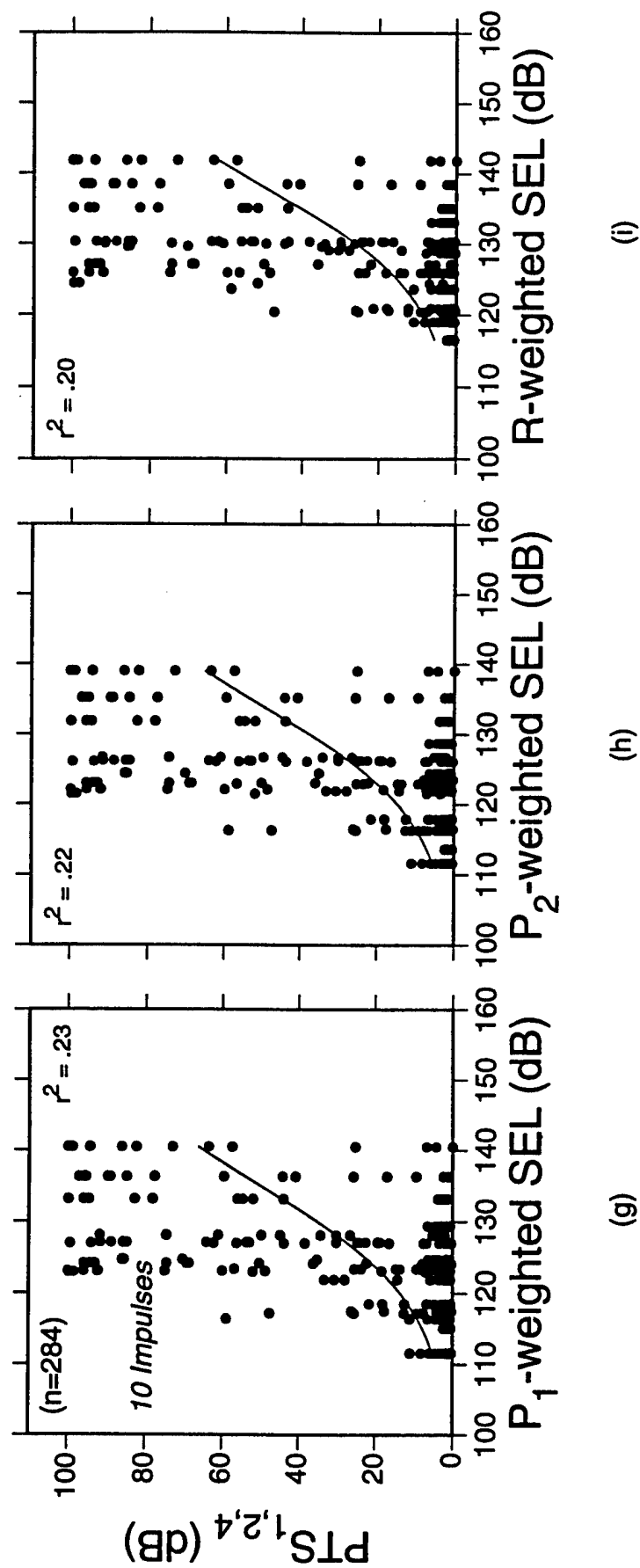are listed in Table10. (r^2 = coefficient of determination)

Figure 38 (d-f)   The average percent OHC loss in the cochlea over octave-band lengths of the basilar membrane

centered at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for all

animals exposed to 10 impulses (n=284) at the indicated level of the hazard index (d) Unweighted

SEL, (e) A-weighted SEL, and (f) P-weighted SEL. The solid line is the nonlinear regression fit of

Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each

regression line are listed in Table 10. (r^2 = coefficient of determination)

Figure 38 (g-i)   The average percent OHC loss in the cochlea over octave-band lengths of the basilar membrane

centered at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for all

animals exposed to 10 impulses (n=284) at the indicated level of the hazard index (g) P_1-weighted

SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL. The solid line is the nonlinear regression fit of

Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to

each regression line are listed in Table 10. (r^2 = coefficient of determination)
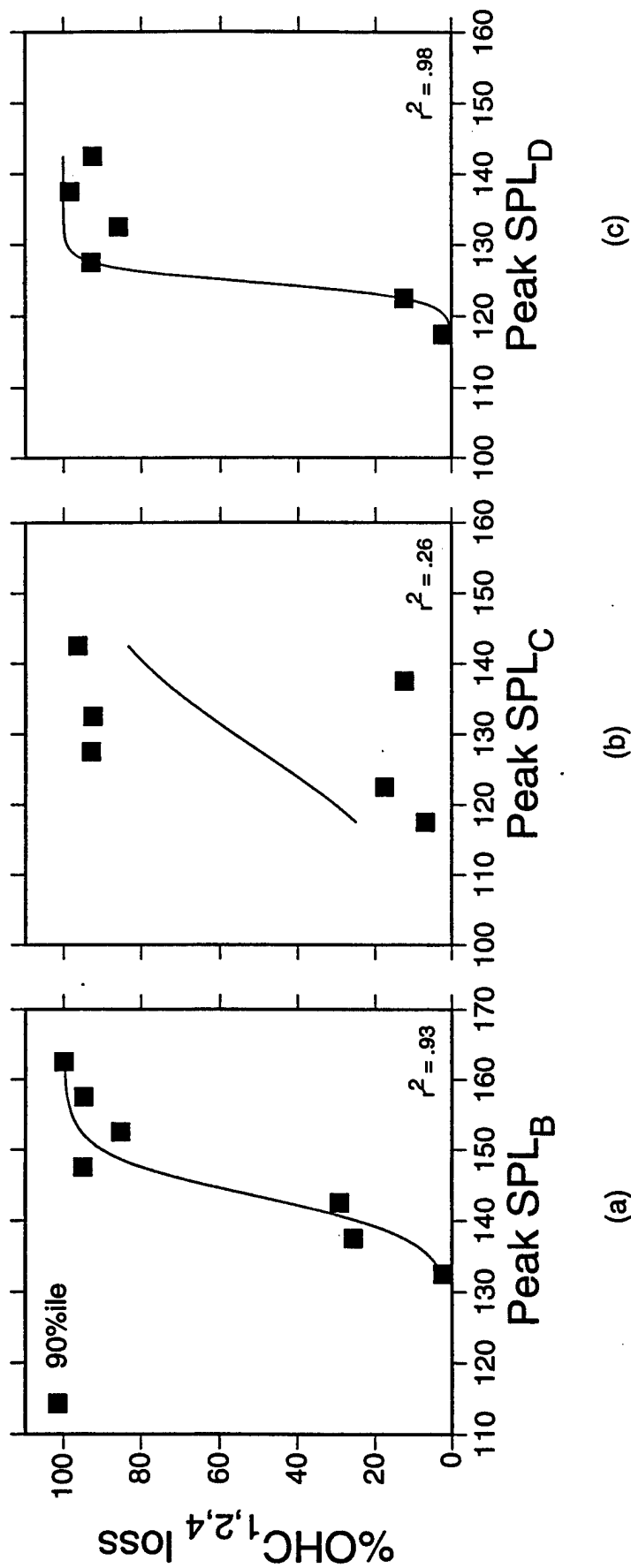
Figure 39 (a-c) The 90th percentile of percent OHC loss in the cochlea over octave-band lengths of the basilar membrane centered at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for all animals exposed to 10 impulses falling within 5 dB bins of the indicated level of the hazard index (a) Peak SPL$_B$, (b) Peak SPL$_C$, and (c) Peak SPL$_D$. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 10. (r^2 = coefficient of determination)
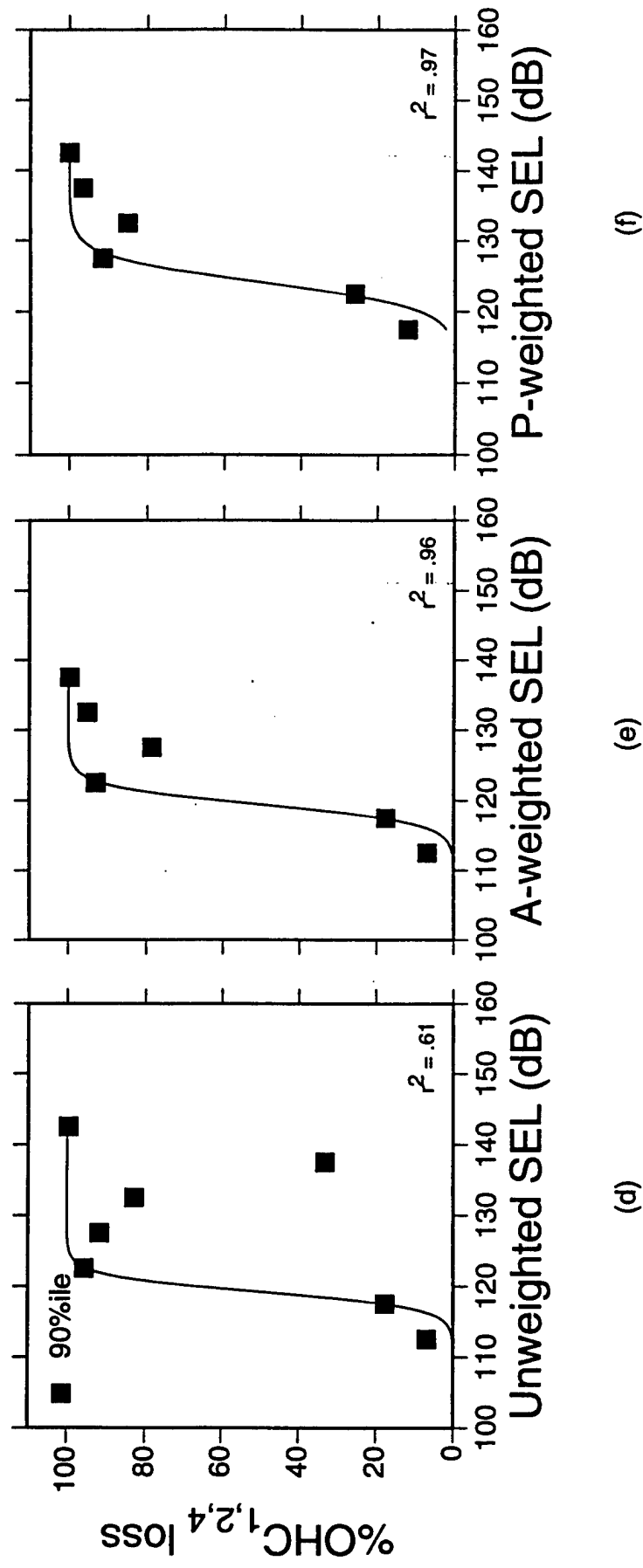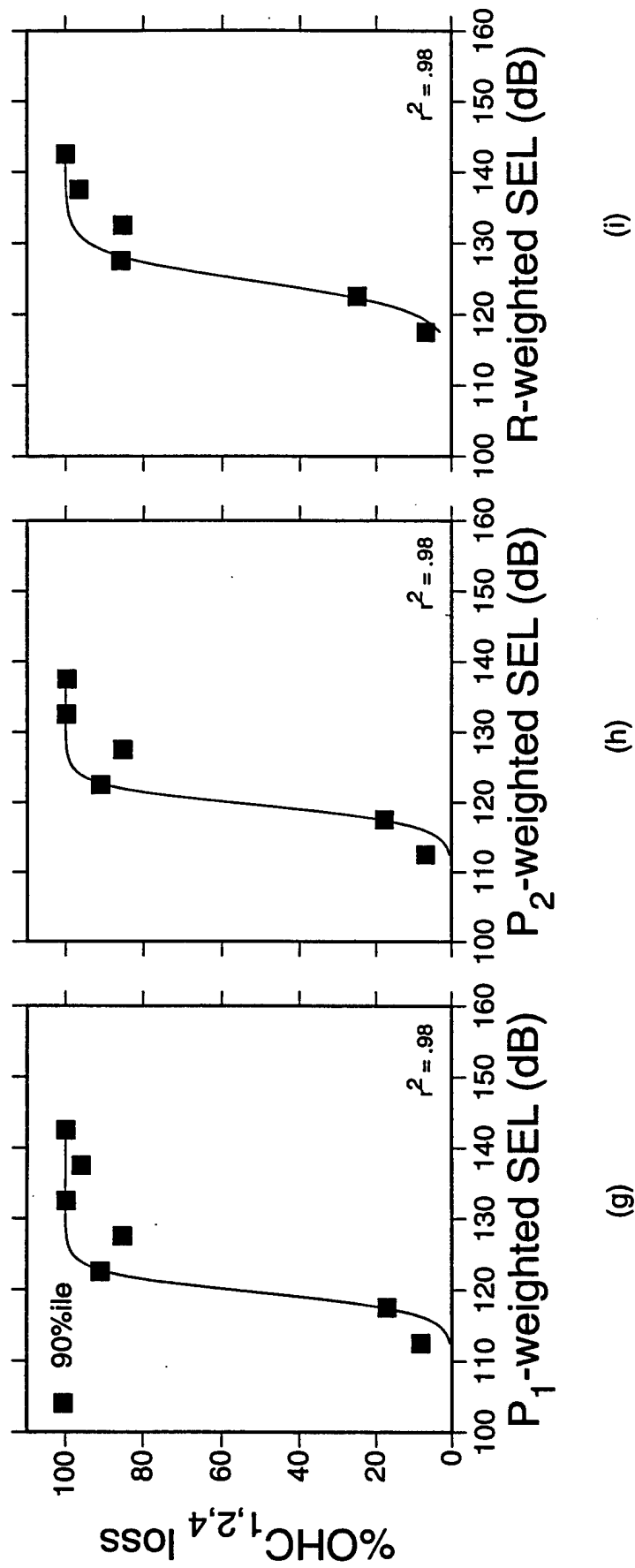
Figure 39 (d-f)   The 90th percentile of percent OHC loss in the cochlea over octave-band lengths of the basilar membrane centered at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for all animals exposed to 10 impulses falling within 5 dB bins of the indicated level of the hazard index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 10. (r^2 = coefficient of determination)

Figure 39 (g-i)   The 90th percentile of percent OHC loss in the cochlea over octave-band lengths of the basilar

membrane centered at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for

all animals exposed to 10 impulses falling within 5 dB bins of the indicated level of the hazard index (g) P_1-

weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL. The solid line is the nonlinear regression fit

of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each

regression line are listed in Table 10. (r^2 = coefficient of determination)
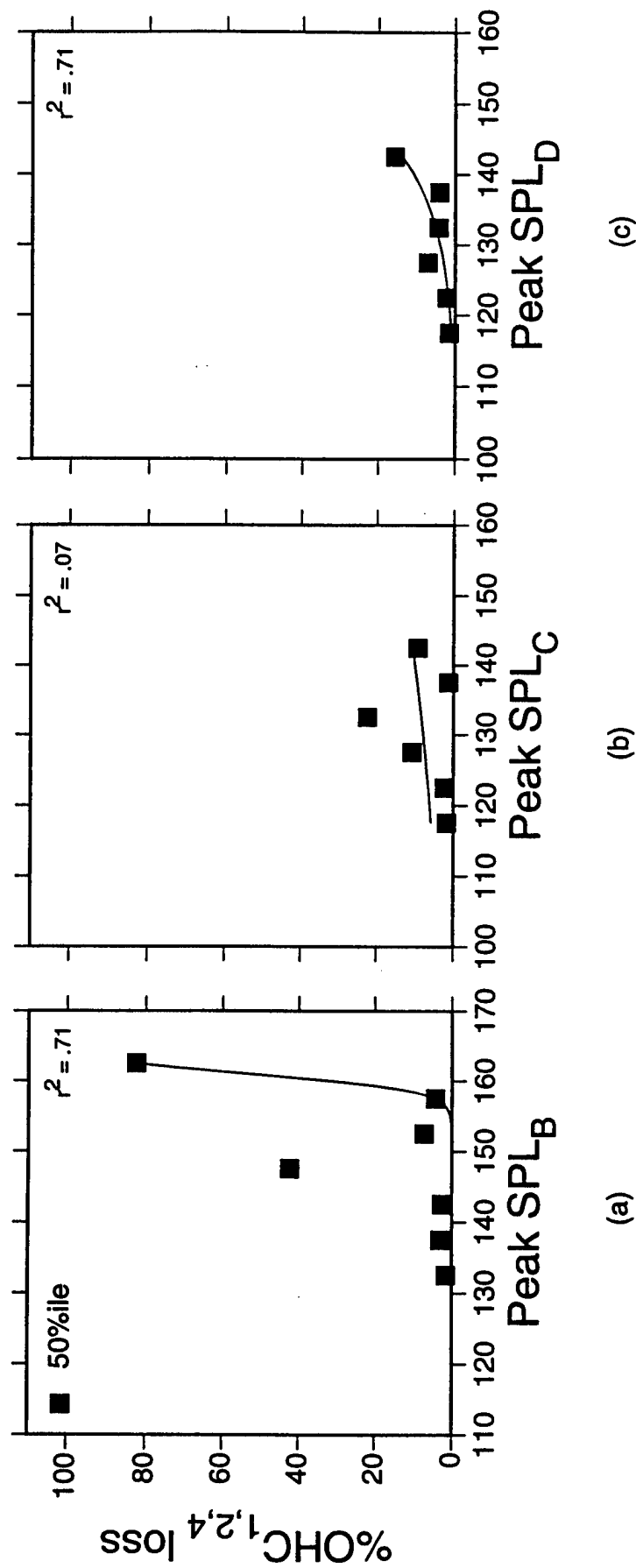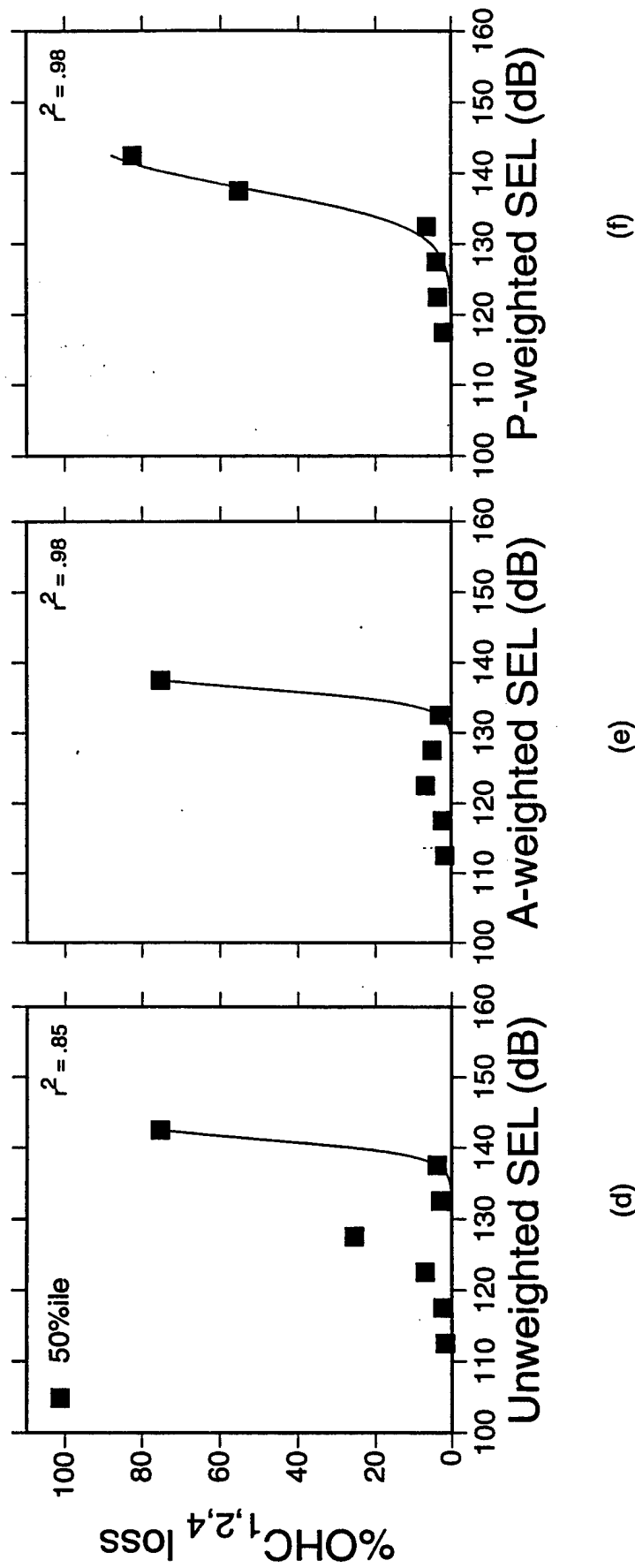
Figure 40 (a-c)   The 50th percentile of percent OHC loss in the cochlea over octave-band lengths of the basilar

membrane centered at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies

for all animals exposed to10 impulses falling within 5 dB bins of the indicated level of the hazard index

(a) Peak SPL_B, (b) Peak SPL_C, and (c) Peak SPL_D. The solid line is the nonlinear regression fit of

Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each

regression line are listed in Table 10. (r^2 = coefficient of determination)
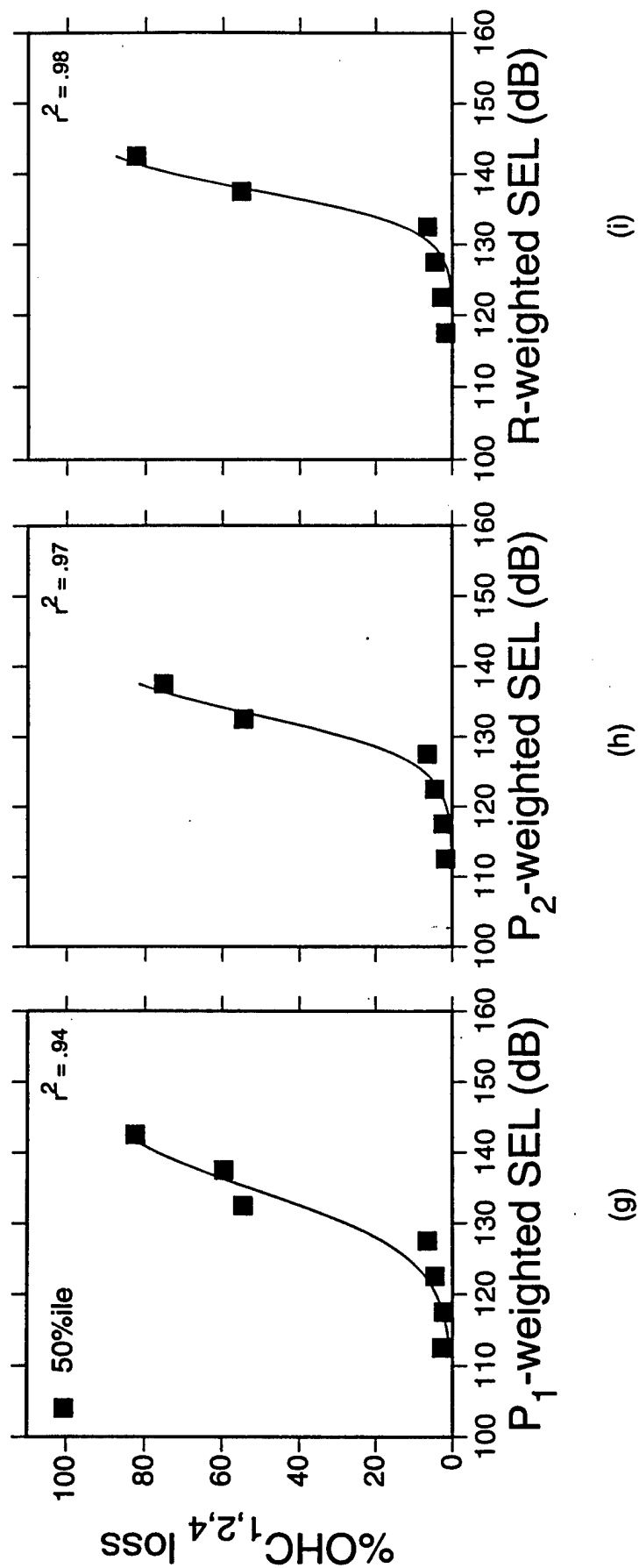
Figure 40 (d-f)   The 50th percentile of percent OHC loss in the cochlea over octave-band lengths of the basilar

membrane centered at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for

all animals exposed to 10 impulses falling within 5 dB bins of the indicated level of the hazard index (d)

Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL.   The solid line is the nonlinear regression

fit of Equation (20) to the data.   The three parameters, A, B, and C of Equation (20) corresponding to each

regression line are listed in Table 10. (r² = coefficient of determination)

Figure 40 (g-i) The 50th percentile of percent OHC loss in the cochlea over octave-band lengths of the basilar

membrane centered at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for

all animals exposed to 10 impulses falling within 5 dB bins of the indicated level of the hazard index (g) P_1-

weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL. The solid line is the nonlinear regression fit

of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each

regression line are listed in Table 10. (r^2 = coefficient of determination)
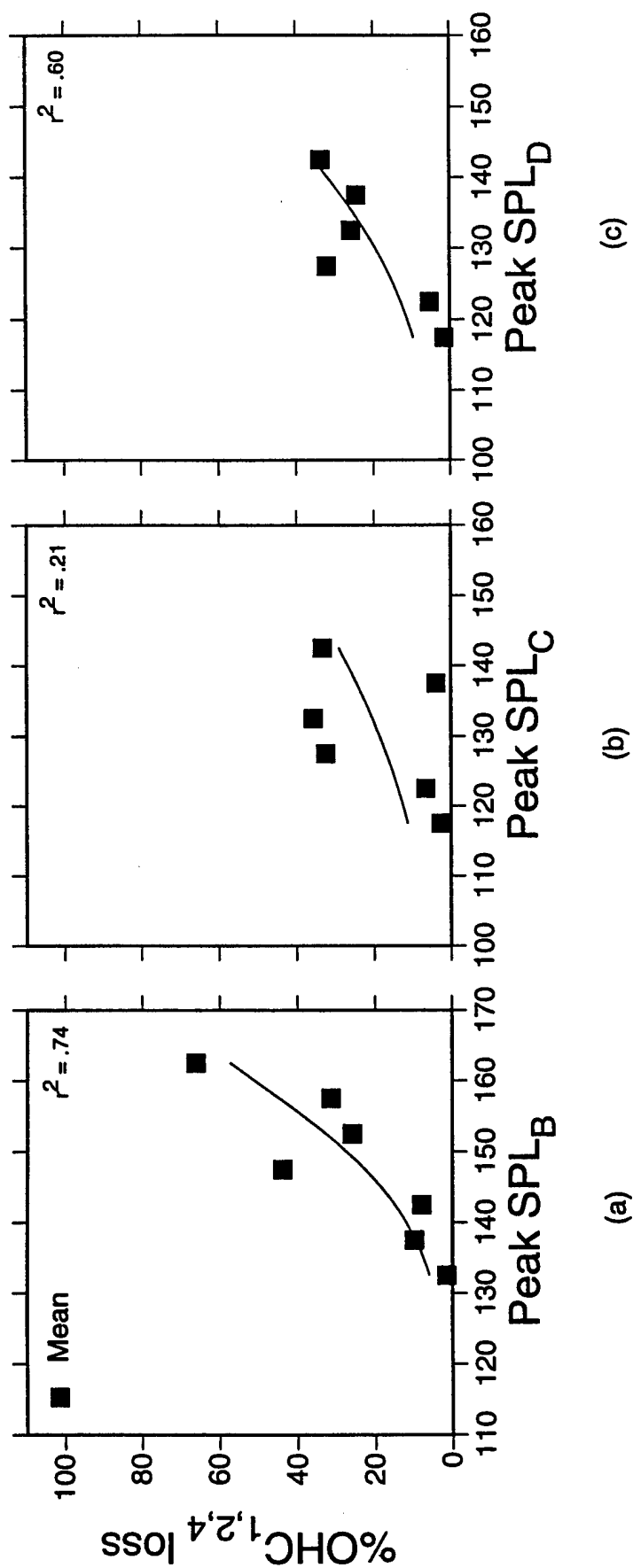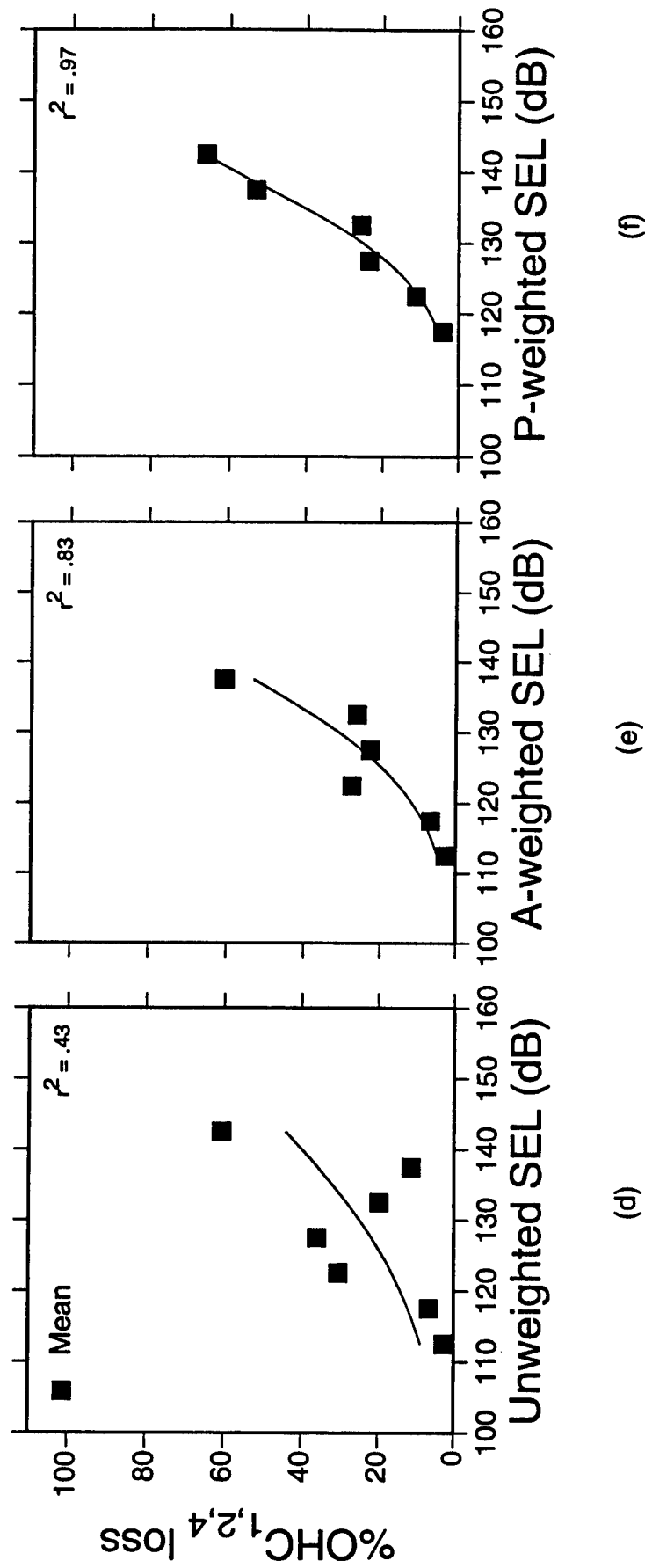
Figure 41 (a-c)   The mean percent OHC loss in the cochlea over octave-band lengths of the basilar membrane

centered at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for all

animals exposed to 10 impulses falling within 5 dB bins of the indicated level of the hazard index (a)

Peak SPL_B, (b) Peak SPL_C, and (c) Peak SPL_D. The solid line is the nonlinear regression fit of

Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each

regression line are listed in Table 10. (r^2 = coefficient of determination)
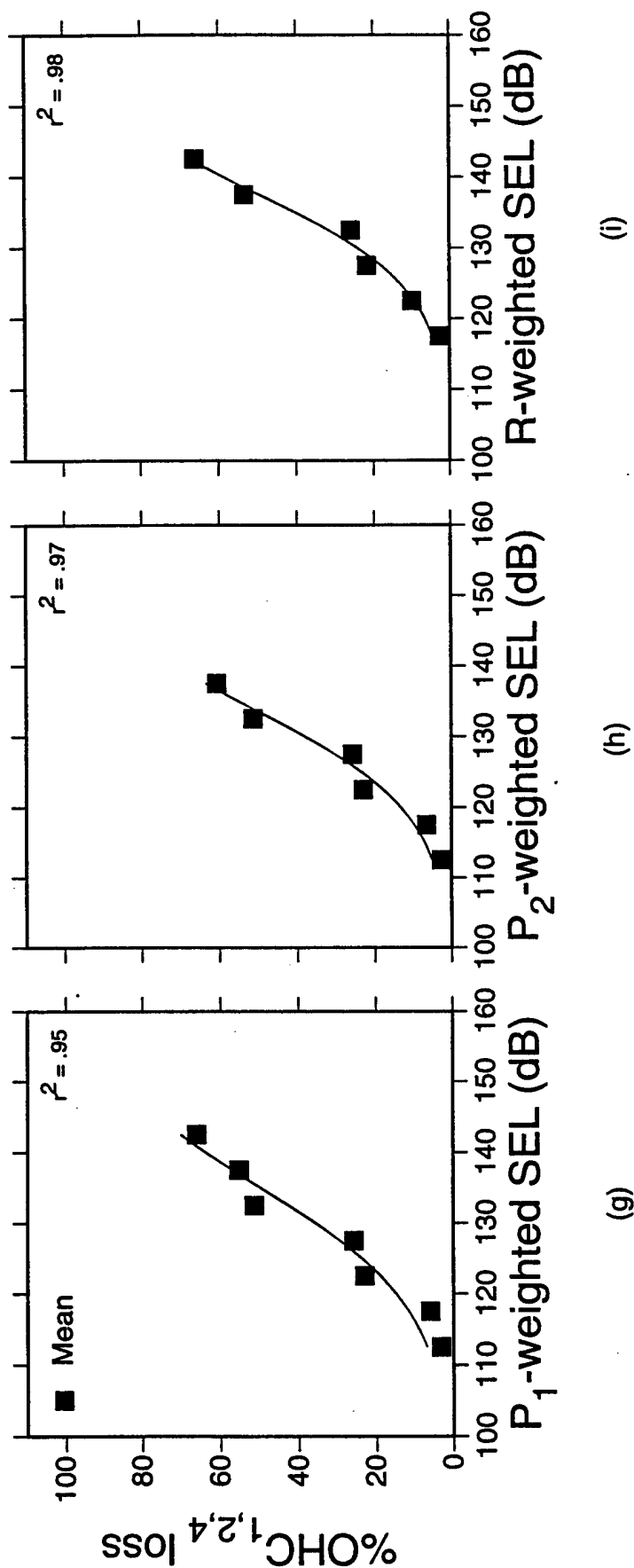
Figure 41 (d-f)   The mean percent OHC loss in the cochlea over octave-band lengths of the basilar membrane centered

at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for all animals exposed to

10 impulses falling within 5 dB bins of the indicated level of the hazard index (d) Unweighted SEL, (e) A-

weighted SEL, and (f) P-weighted SEL.   The solid line is the nonlinear regression fit of Equation (20) to

the data.   The three parameters, A, B, and C of Equation (20) corresponding to each regression line are

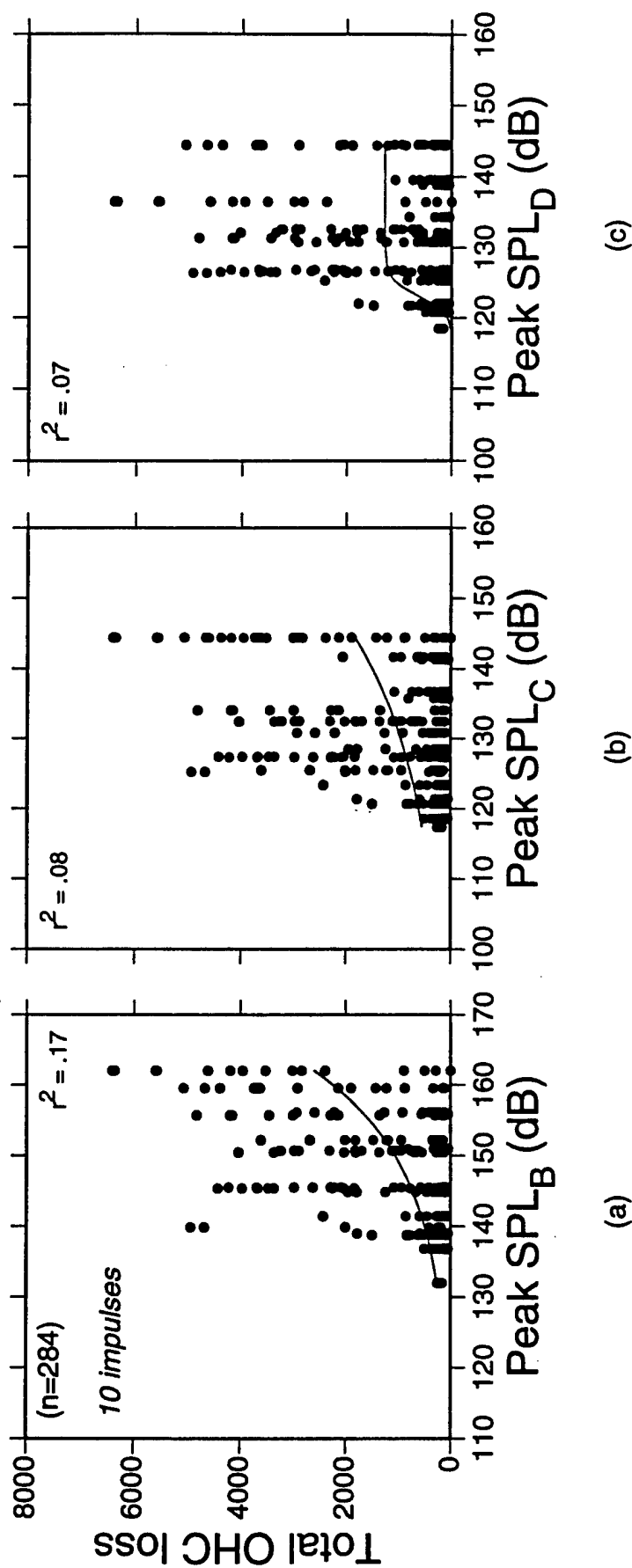listed in Table 10. (r^2 = coefficient of determination)

Figure 41 (g-i)   The mean percent OHC loss in the cochlea over octave-band lengths of the basilar membrane centered

at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for all animals exposed to

10 impulses falling within 5 dB bins of the indicated level of the hazard index (g) P_1-weighted SEL, (h) P_2-

weighted SEL, and (i) R-weighted SEL.   The solid line is the nonlinear regression fit of Equation (20) to

the data.   The three parameters, A, B, and C of Equation (20) corresponding to each regression line are

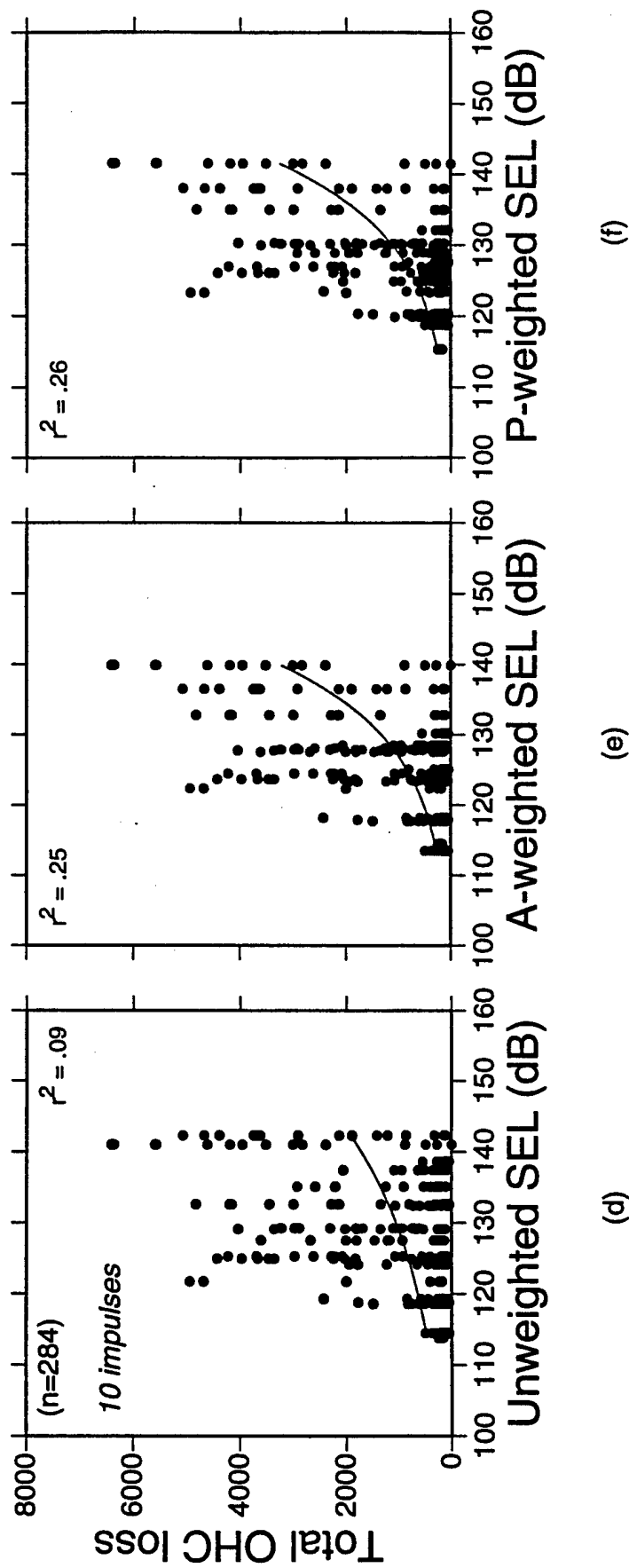listed in Table 10. (r^2 = coefficient of determination)

Figure 42 (a-c) Total OHC loss in the cochlea of each animal exposed to 10 impulses (n=284) at the indicated level of

the hazard index (a) Peak SPL$_B$, (b) Peak SPL$_C$, and (c) Peak SPL$_D$. The solid line is the nonlinear

regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20)

corresponding to each regression line are listed in Table 11. (r^2 = coefficient of determination)
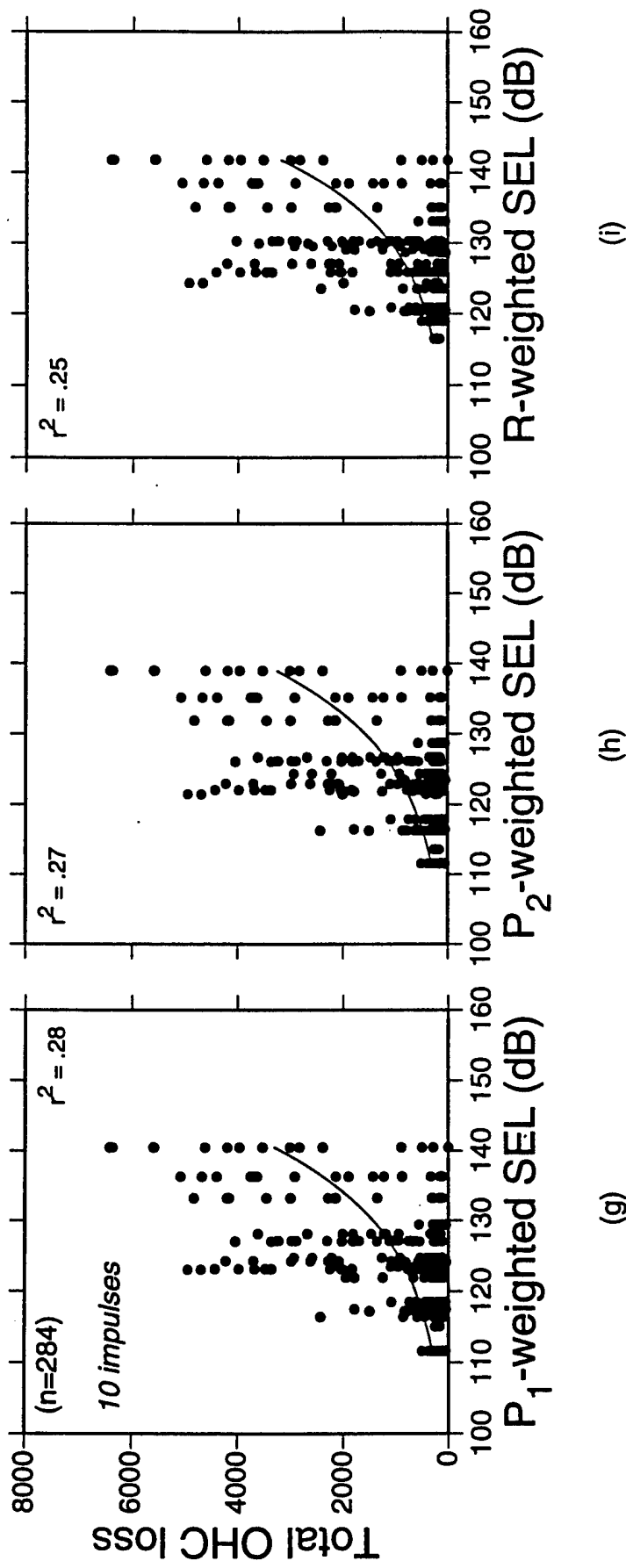
Figure 42 (d-f) Total OHC loss in the cochlea of each animal exposed to 10 impulses (n=284) at the indicated level of the hazard index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 11. (r^2 = coefficient of determination)
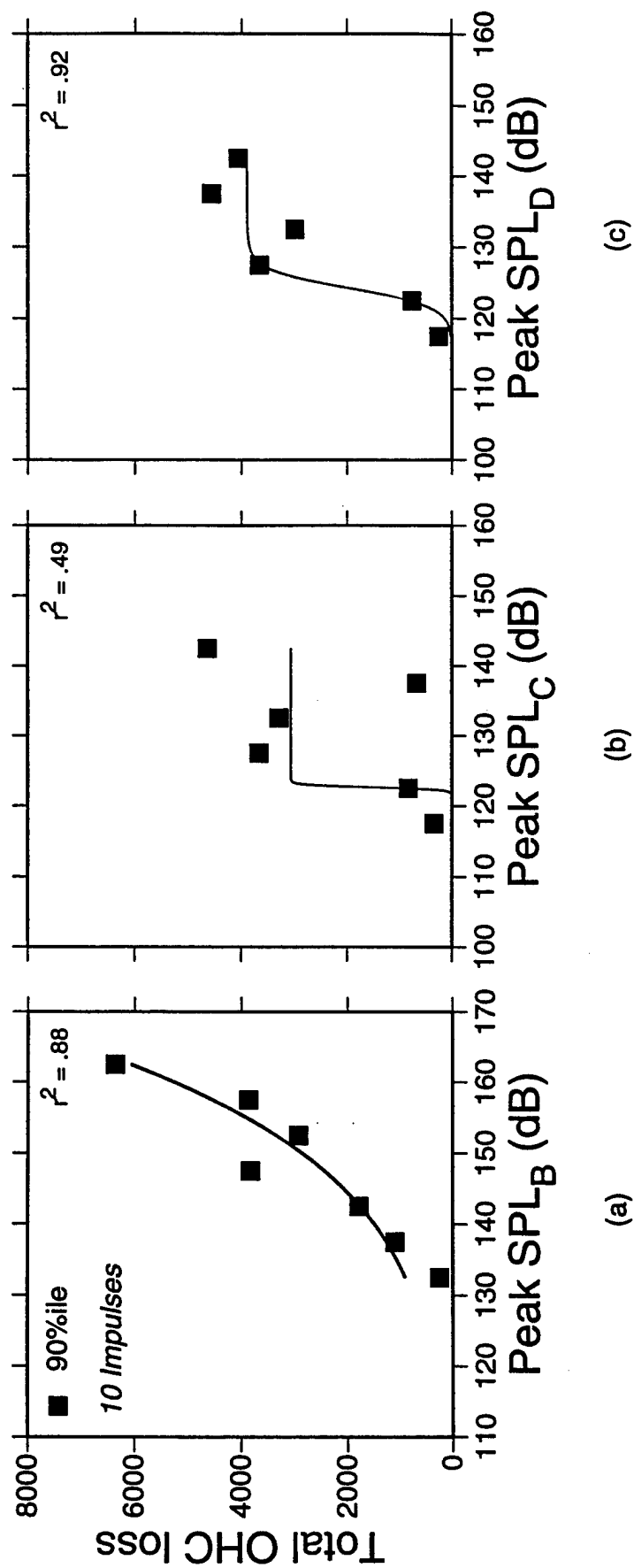
Figure 42 (g-i)   Total OHC loss in the cochlea of each animal exposed to 10 impulses (n=284) at the indicated level of

the hazard index (g) P_1-weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL. The solid line is

the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of

Equation (20) corresponding to each regression line are listed in Table 11. (r^2 = coefficient of
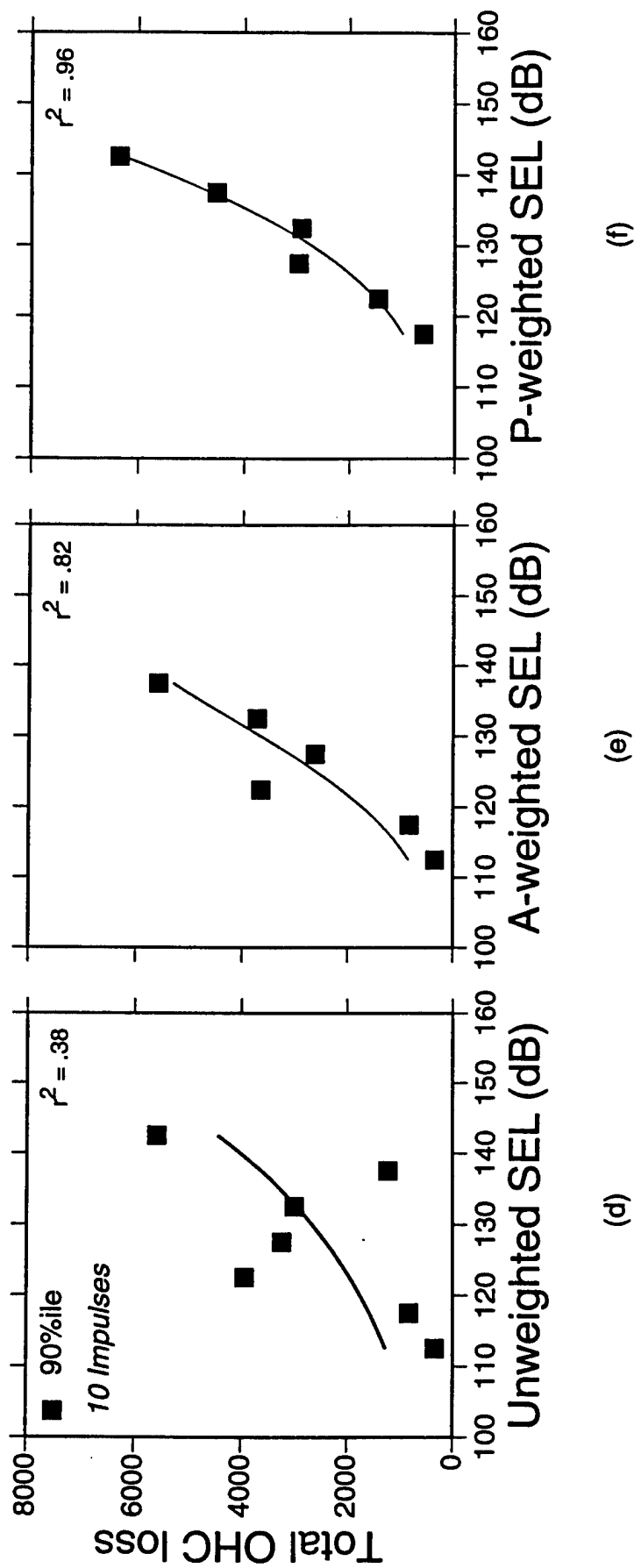
determination)

Figure 43 (a-c) The 90th percentile total OHC loss for all animals exposed to 10 impulses falling within 5 dB bins of the indicated level of the hazard index (a) Peak SPL$_B$, (b) Peak SPL$_C$, and (c) Peak SPL$_D$. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 11. (r^2 = coefficient of determination)
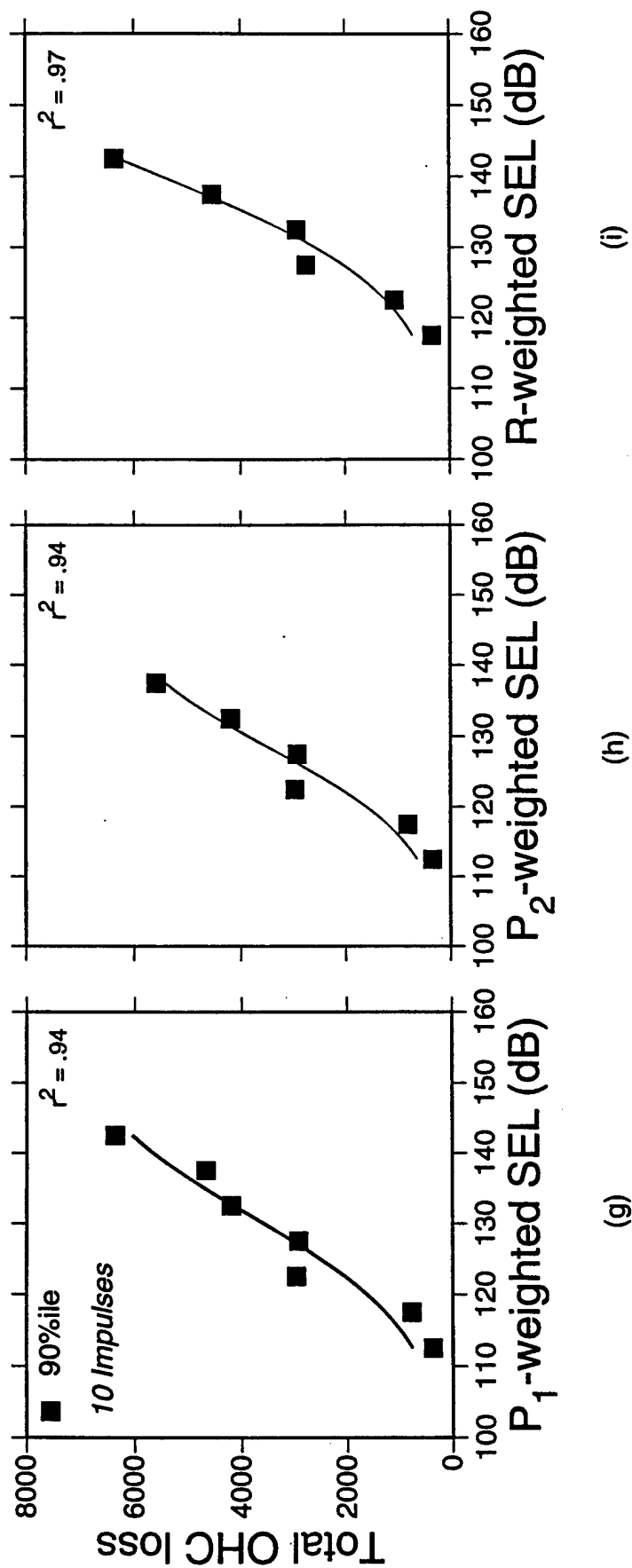
Figure 43 (d-f)   The 90th percentile total OHC loss for all animals exposed to 10 impulses falling within 5 dB bins of the

indicated level of the hazard index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL.

The solid line is the nonlinear regression fit of Equation (20) to the data.   The three parameters, A, B,

and C of Equation (20) corresponding to each regression line are listed in Table 11. (r^2 = coefficient of
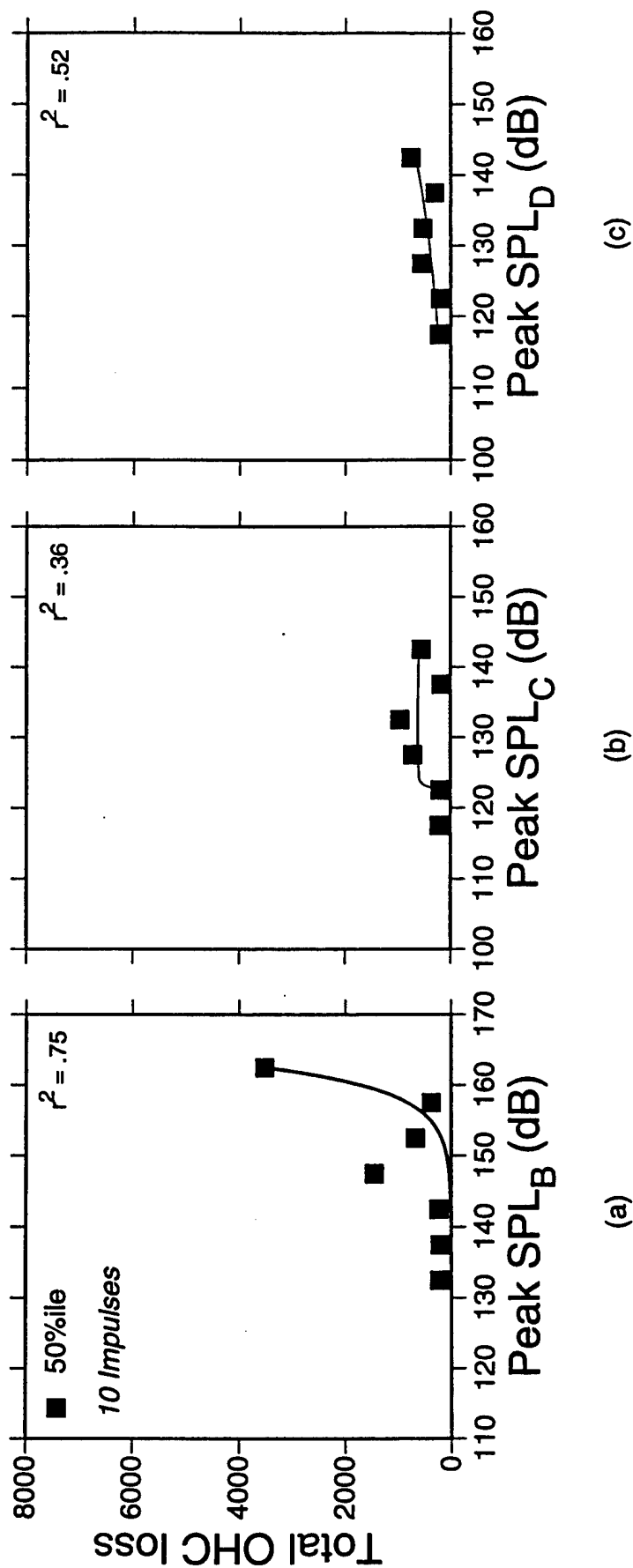
determination)

Figure 43 (g-i)   The 90th percentile total OHC loss for all animals exposed to 10 impulses falling within 5 dB bins of the indicated level of the hazard index (g) P_1-weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL.

The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B,

and C of Equation (20) corresponding to each regression line are listed in Table 11. (r^2 = coefficient of
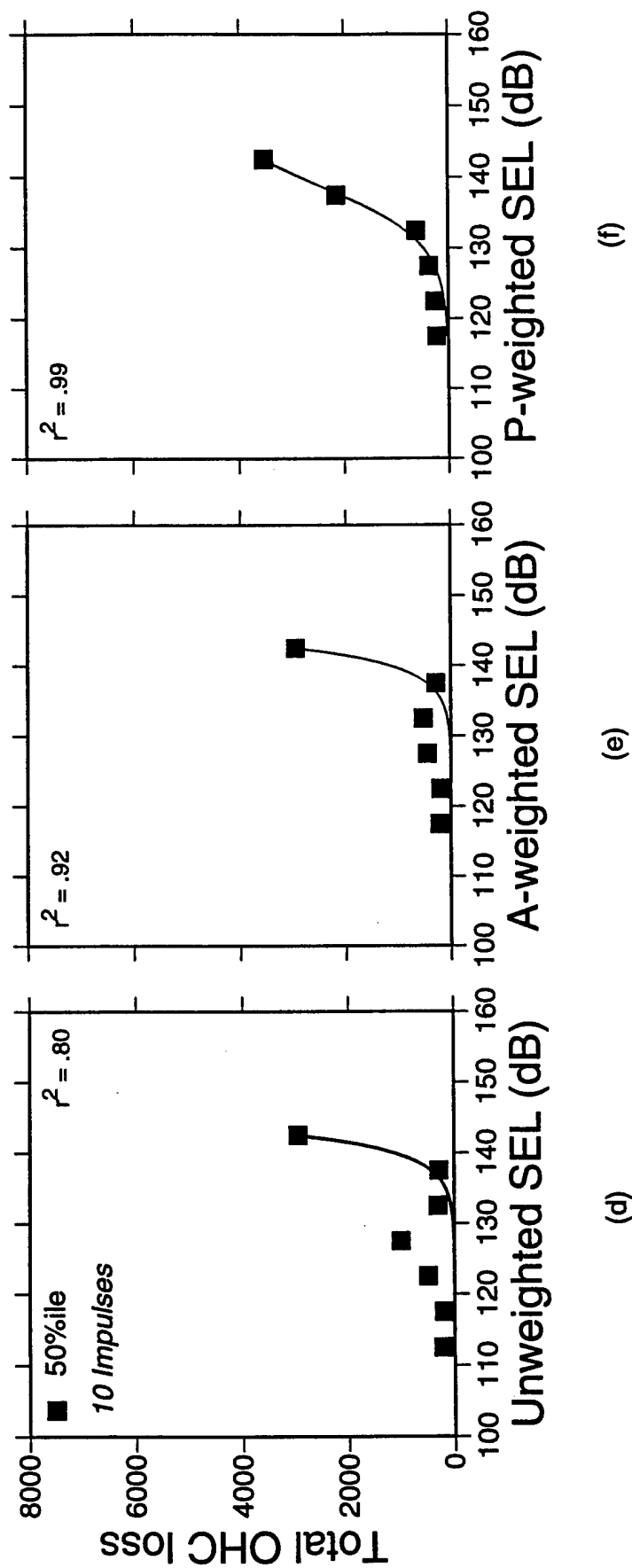
determination)

Figure 44 (a-c)   The 50th percentile total OHC loss for all animals exposed to 10 impulses falling within 5 dB bins of the

indicated level of the hazard index (a) Peak SPL_B, (b) Peak SPL_C, and (c) Peak SPL_D.   The solid line is

the nonlinear regression fit of Equation (20) to the data.   The three parameters, A, B, and C of

Equation (20) corresponding to each regression line are listed in Table 11. (r^2 = coefficient of
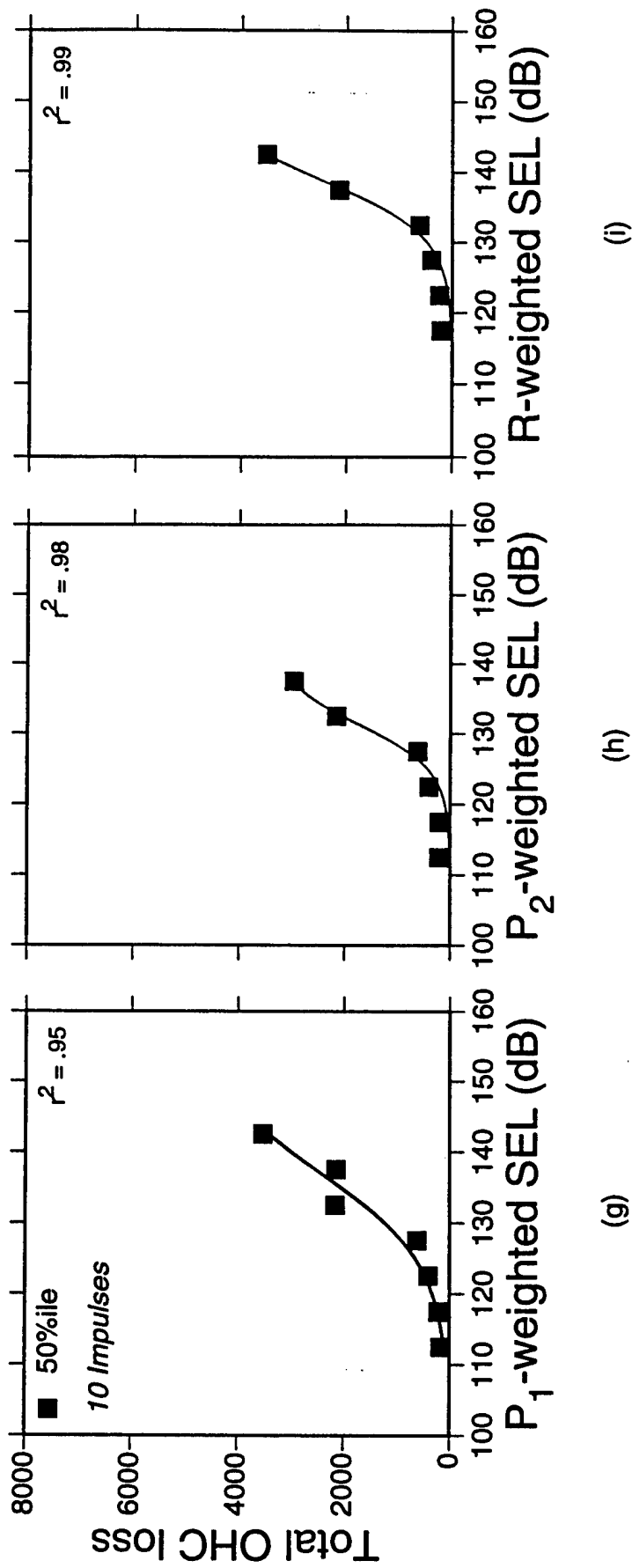
determination)

Figure 44 (d-f) The 50th percentile total OHC loss for all animals exposed to 10 impulses falling within 5 dB bins of the indicated level of the hazard index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 11. (r^2 = coefficient of determination)
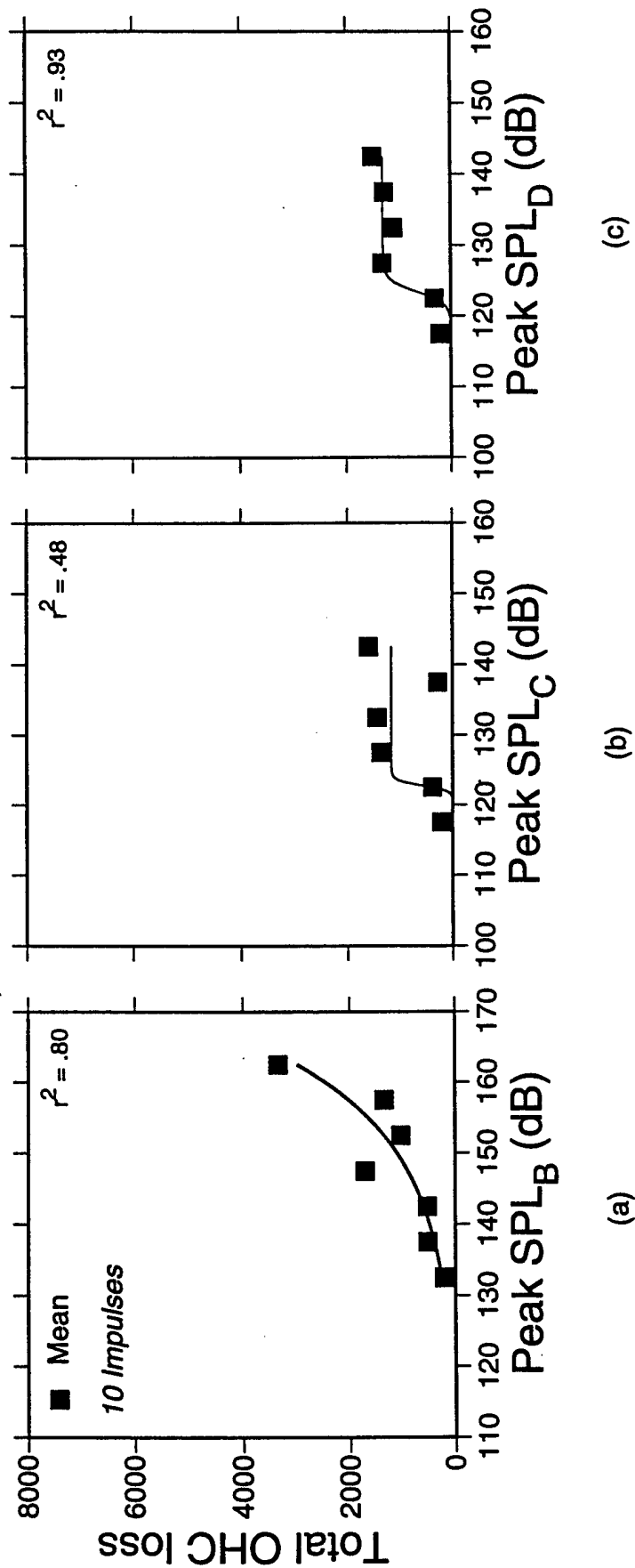
Figure 44 (g-i)   The 50th percentile total OHC loss for all animals exposed to 10 impulses falling within 5 dB bins of the

indicated level of the hazard index (g) P_1-weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL.

The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B,

and C of Equation (20) corresponding to each regression line are listed in Table 11. (r^2 = coefficient of
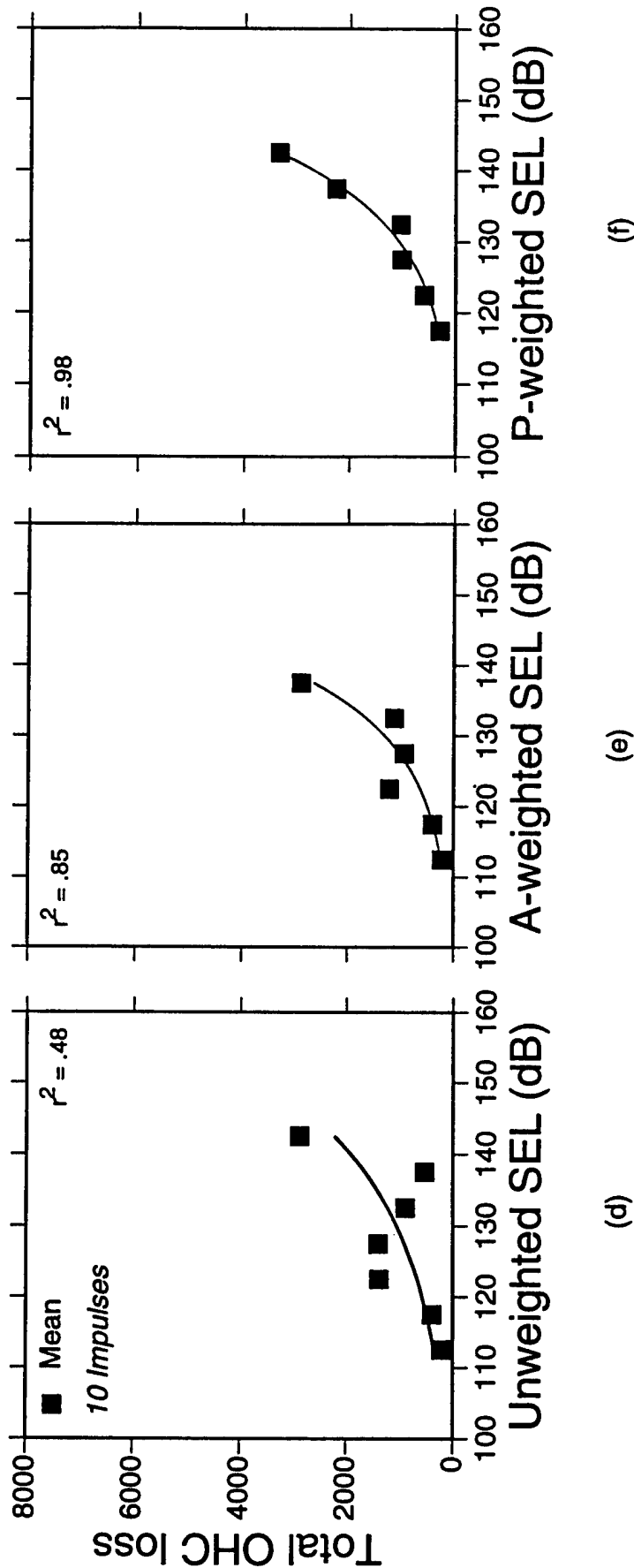
determination)

Figure 45 (a-c)   The mean total OHC loss for all animals exposed to 10 impulses falling within 5 dB bins of the indicated level of the hazard index (a) Peak SPL$_B$, (b) Peak SPL$_C$, and (c) Peak SPL$_D$. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 11. (r^2 = coefficient of determination)
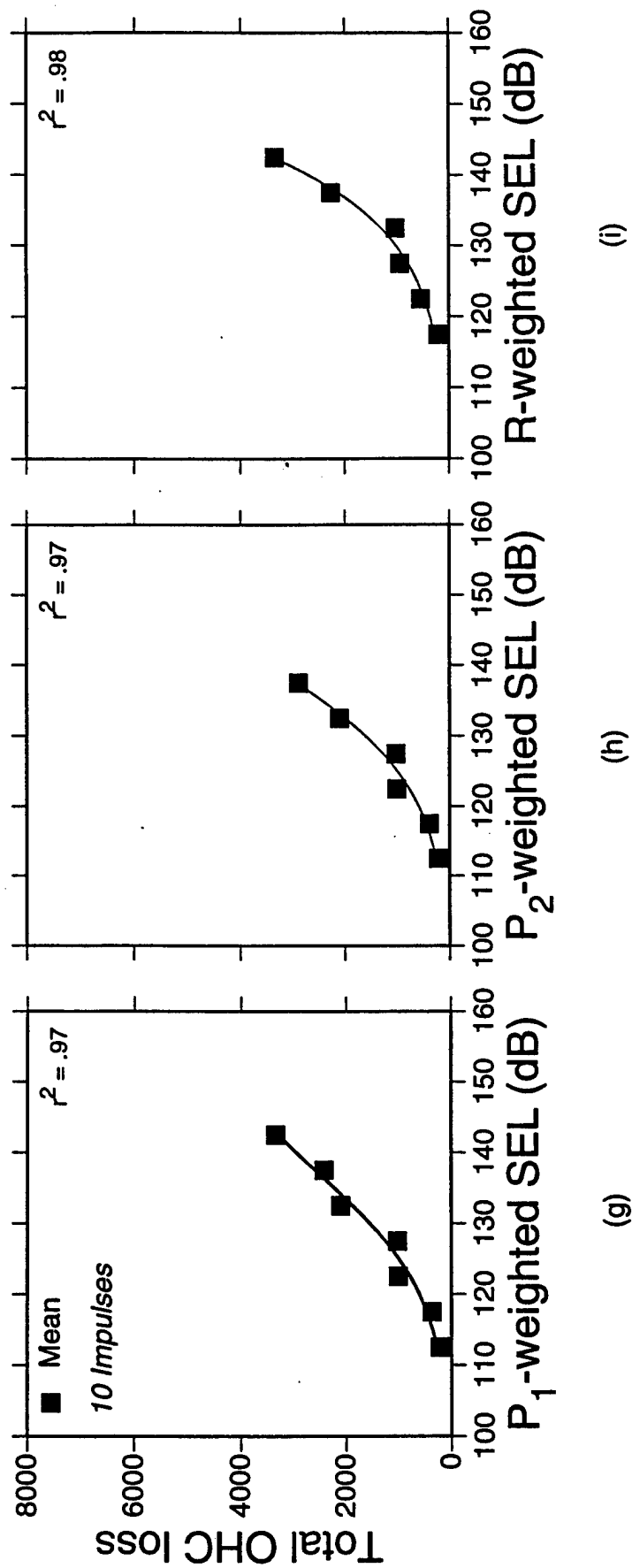
Figure 45 (d-f)   The mean total OHC loss for all animals exposed to 10 impulses falling within 5 dB bins of the indicated

level of the hazard index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL.   The solid

line is the nonlinear regression fit of Equation (20) to the data.   The three parameters, A, B, and C of

Equation (20) corresponding to each regression line are listed in Table 11. (r^2 = coefficient of
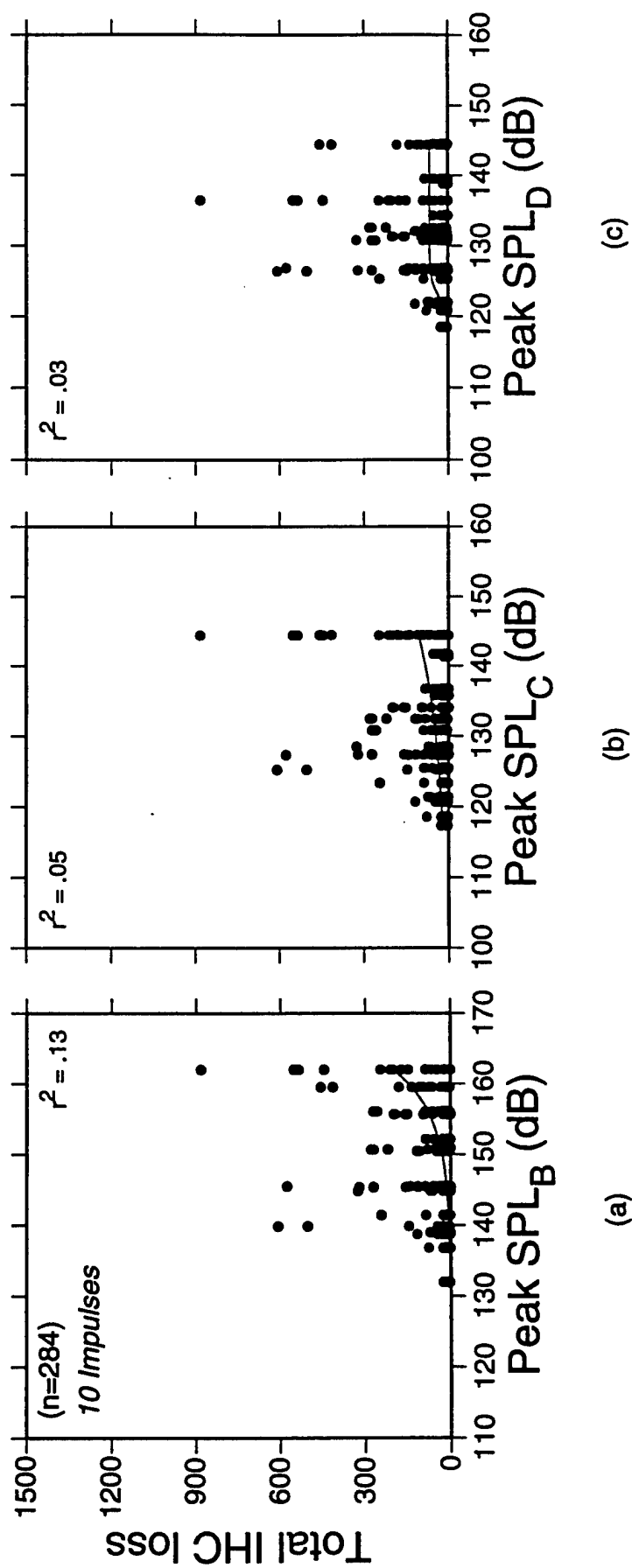
determination)

Figure 45 (g-i)   The mean total OHC loss for all animals exposed to 10 impulses falling within 5 dB bins of the

indicated level of the hazard index (g) P_1-weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL.

The solid line is the nonlinear regression fit of Equation (20) to the data.   The three parameters, A, B,

and C of Equation (20) corresponding to each regression line are listed in Table 11. (r^2 = coefficient of
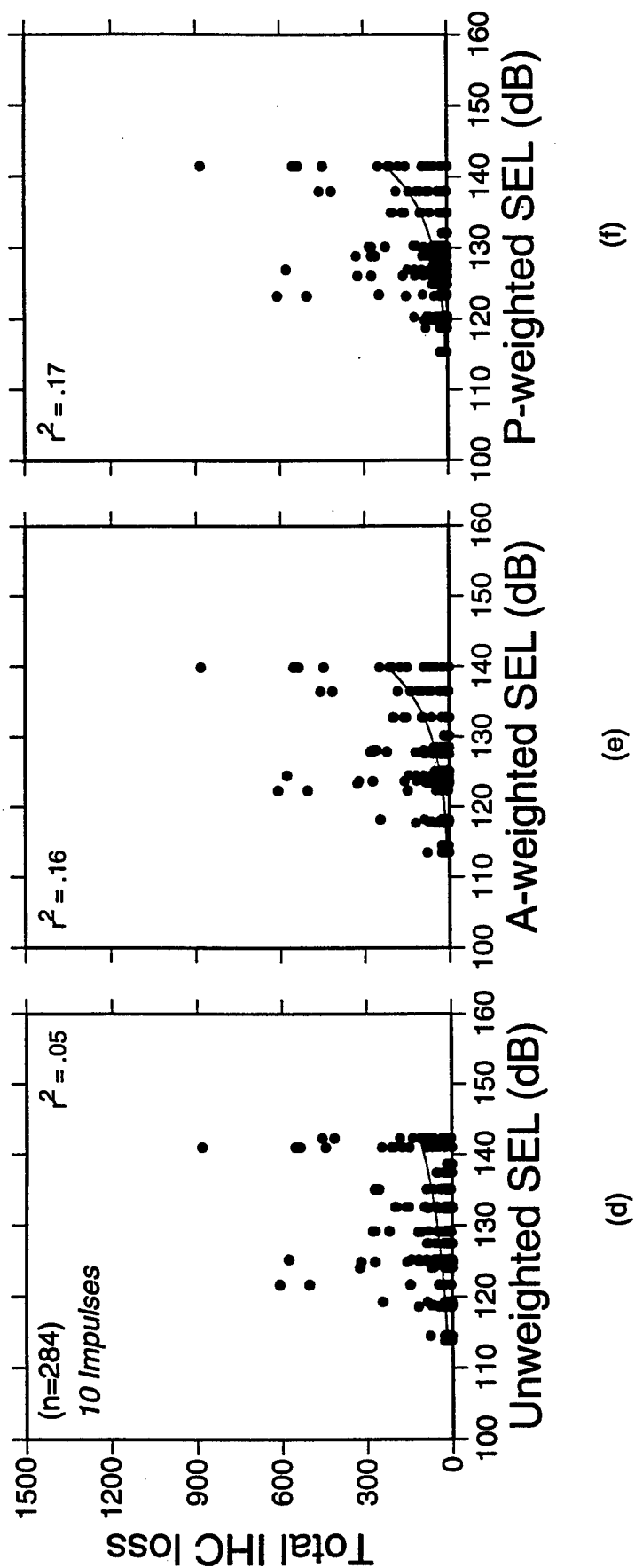
determination)

Figure 46 (a-c) Total IHC loss in the cochlea of each animal exposed to 10 impulses (n=284) at the indicated level of

the hazard index (a) Peak SPL_B, (b) Peak SPL_C, and (c) Peak SPL_D. The solid line is the nonlinear

regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20)

corresponding to each regression line are listed in Table 12. (r^2 = coefficient of determination)
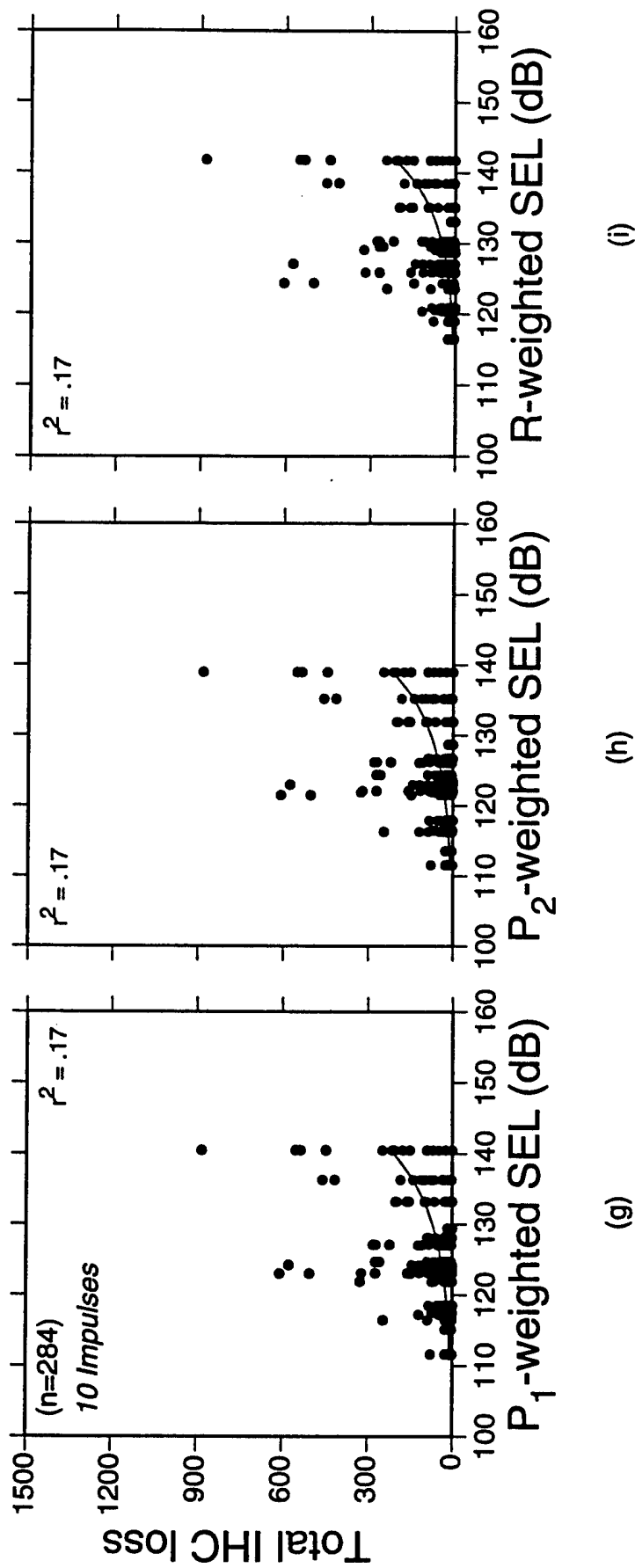
Figure 46 (d-f)   Total IHC loss in the cochlea of each animal exposed to 10 impulses (n=284) at the indicated level of the hazard index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL.   The solid line is the nonlinear regression fit of Equation (20) to the data.   The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 12. (r^2 = coefficient of determination)
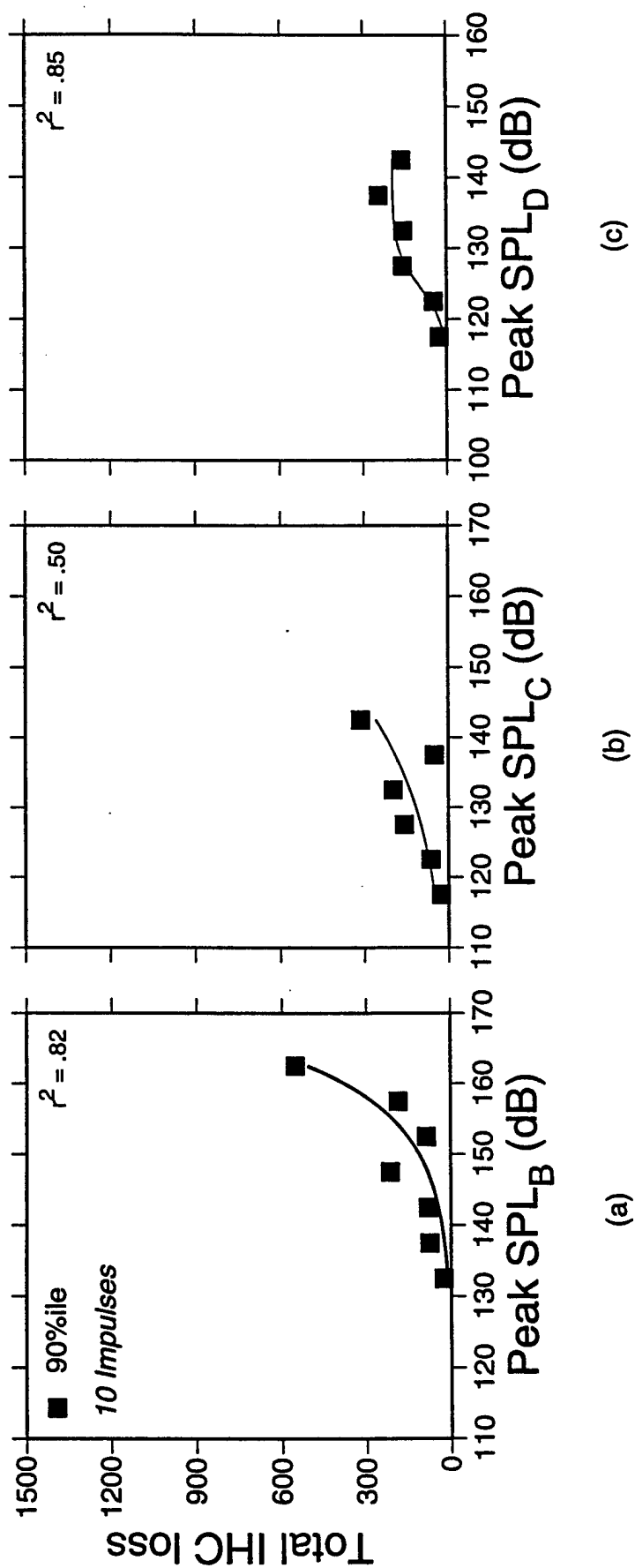
Figure 46 (g-i)   Total IHC loss in the cochlea of each animal exposed to 10 impulses (n=284) at the indicated level of

the hazard index (g) P_1-weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL.   The solid line is

the nonlinear regression fit of Equation (20) to the data.   The three parameters, A, B, and C of

Equation (20) corresponding to each regression line are listed in Table 12. (r^2 = coefficient of
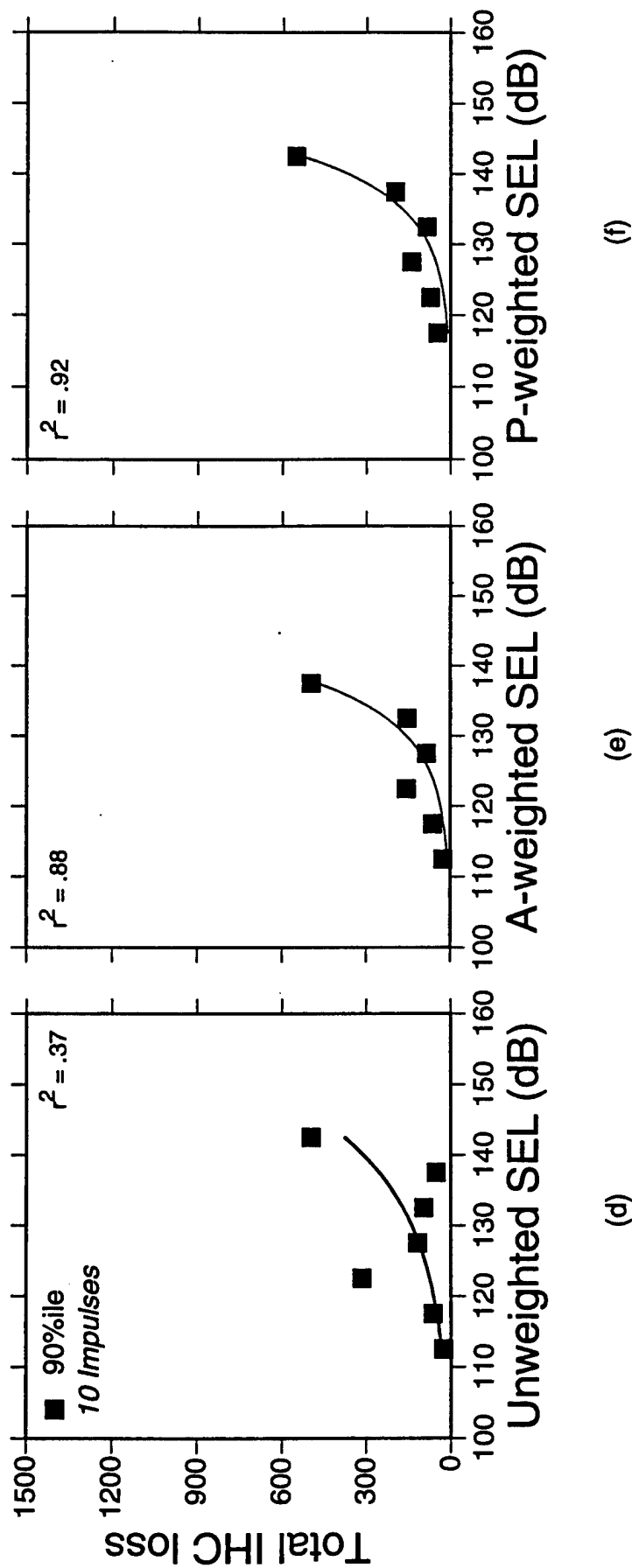
determination)

Figure 47 (a-c) The 90th percentile total IHC loss for all animals exposed to 10 impulses falling within 5 dB bins of

the indicated level of the hazard index (a) Peak SPL_B, (b) Peak SPL_C, and (c) Peak SPL_D. The

solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B,

and C of Equation (20) corresponding to each regression line are listed in Table 12. (r^2 = coefficient
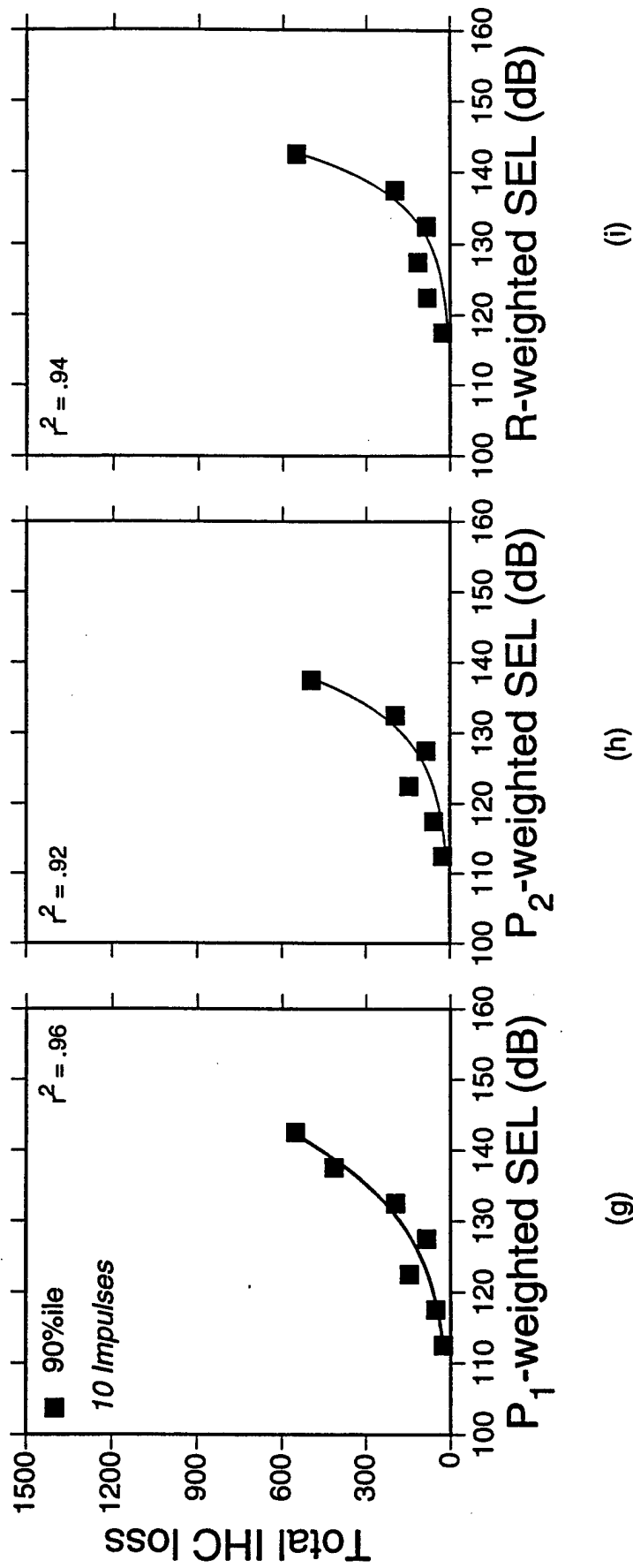
of determination)

Figure 47 (d-f)   The 90th percentile total IHC loss for all animals exposed to 10 impulses falling within 5 dB bins of the indicated level of the hazard index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 12. (r^2 = coefficient of determination)
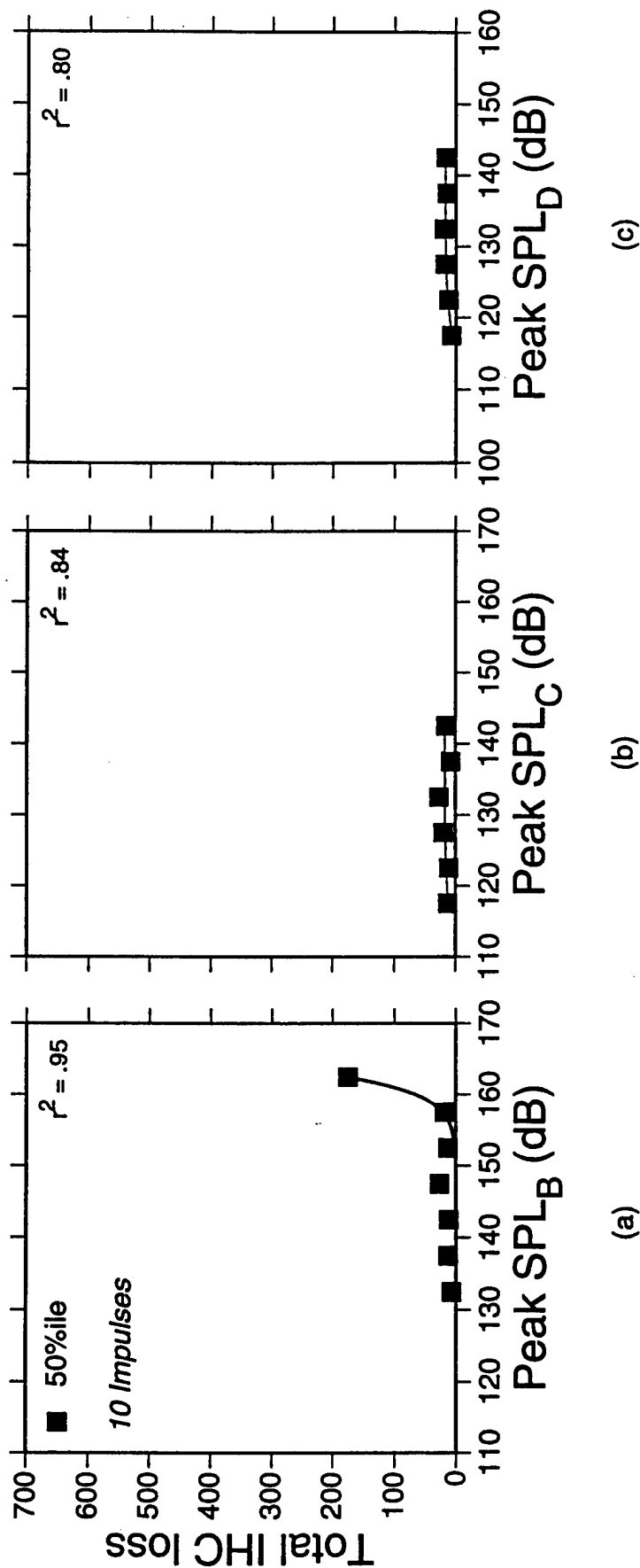
Figure 47 (g-i)   The 90th percentile total IHC loss for all animals exposed to 10 impulses falling within 5 dB bins of the

indicated level of the hazard index (g) P_1-weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL.

The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B,

and C of Equation (20) corresponding to each regression line are listed in Table 12. (r^2 = coefficient of
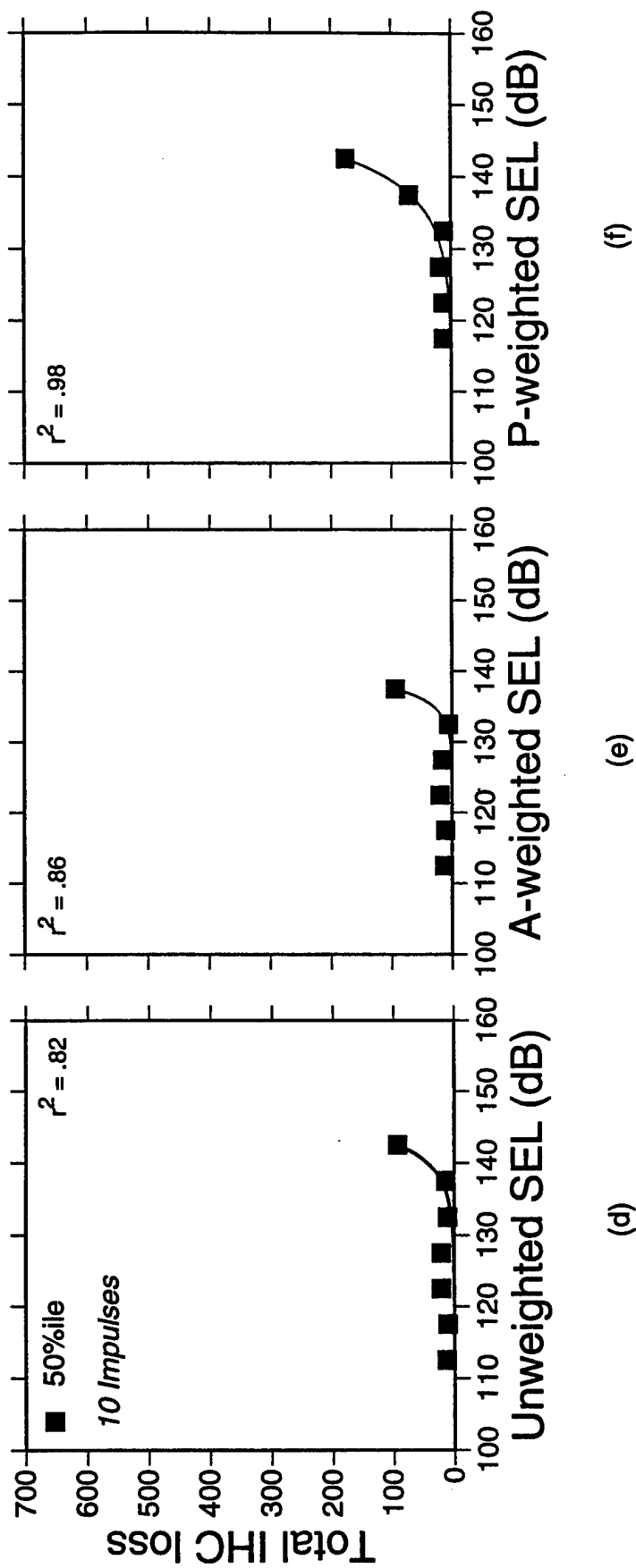
determination)

Figure 48 (a-c) The 50th percentile total IHC loss for all animals exposed to 10 impulses falling within 5 dB bins of

the indicated level of the hazard index (a) Peak SPL_B, (b) Peak SPL_C, and (c) Peak SPL_D. The

solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B,

and C of Equation (20) corresponding to each regression line are listed in Table 12. (r^2 = coefficient
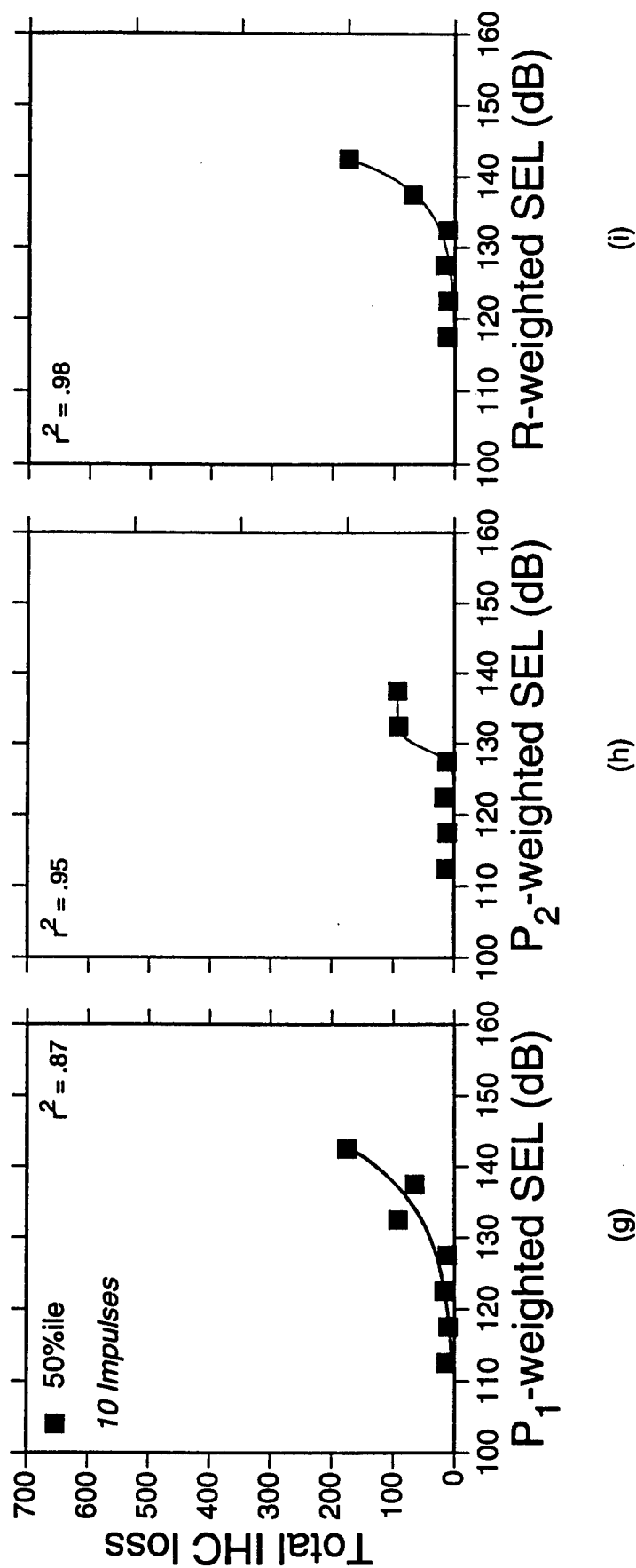
of determination)

Figure 48 (d-f)   The 50th percentile total IHC loss for all animals exposed to 10 impulses falling within 5 dB bins of the indicated level of the hazard index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 12. (r^2 = coefficient of determination)
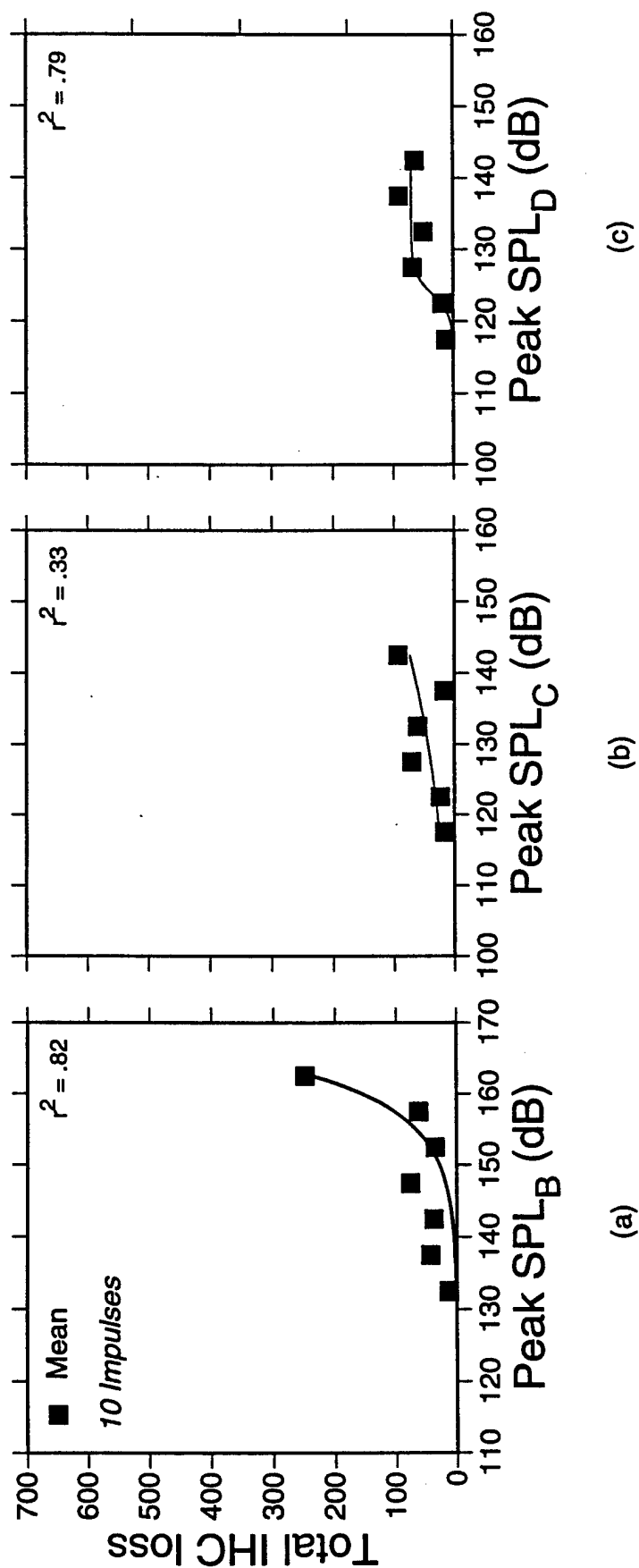
Figure 48 (g-i)   The 50th percentile total IHC loss for all animals exposed to 10 impulses falling within 5 dB bins of the indicated level of the hazard index (g) P_1-weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL.

The solid line is the nonlinear regression fit of Equation (20) to the data.   The three parameters, A, B,

and C of Equation (20) corresponding to each regression line are listed in Table 12. (r^2 = coefficient of
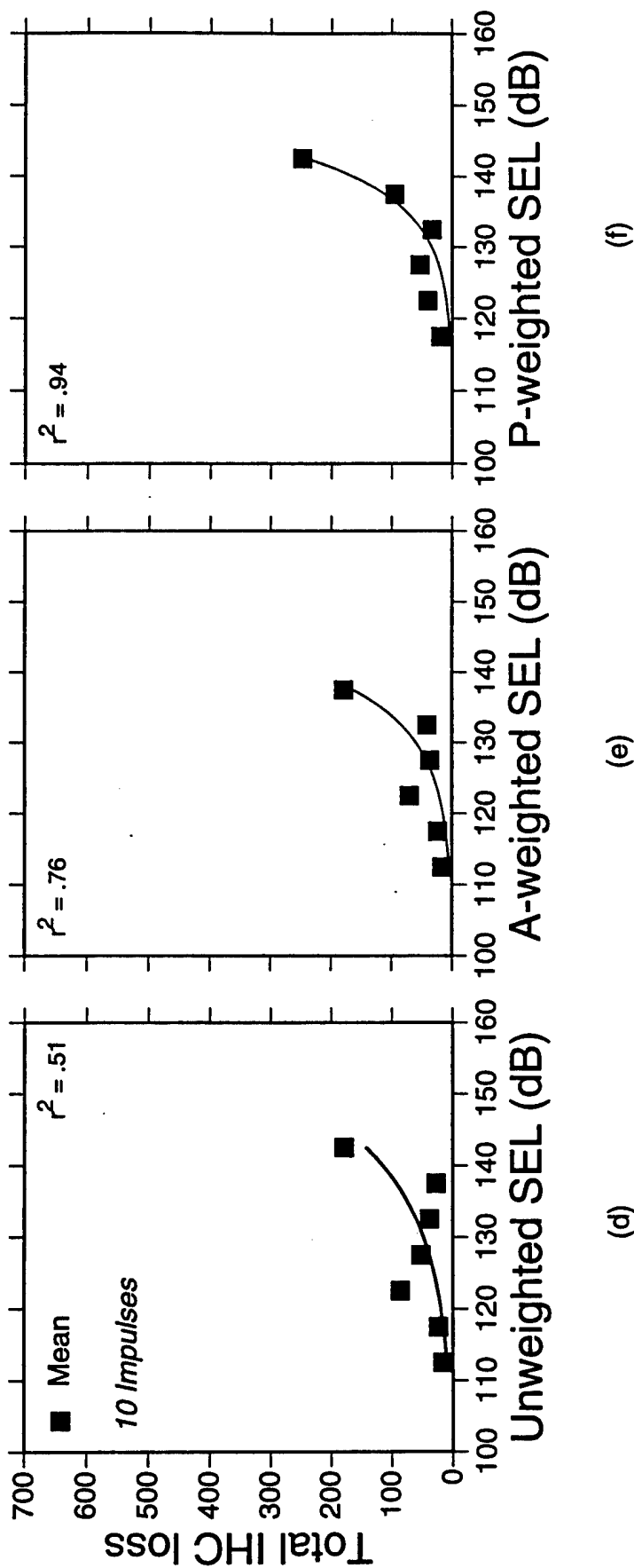
determination)

Figure 49 (a-c)   The mean total IHC loss for all animals exposed to 10 impulses falling within 5 dB bins of the

indicated level of the hazard index (a) Peak SPL$_B$, (b) Peak SPL$_C$, and (c) Peak SPL$_D$. The solid

line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C

of Equation (20) corresponding to each regression line are listed in Table 12. (r^2 = coefficient of
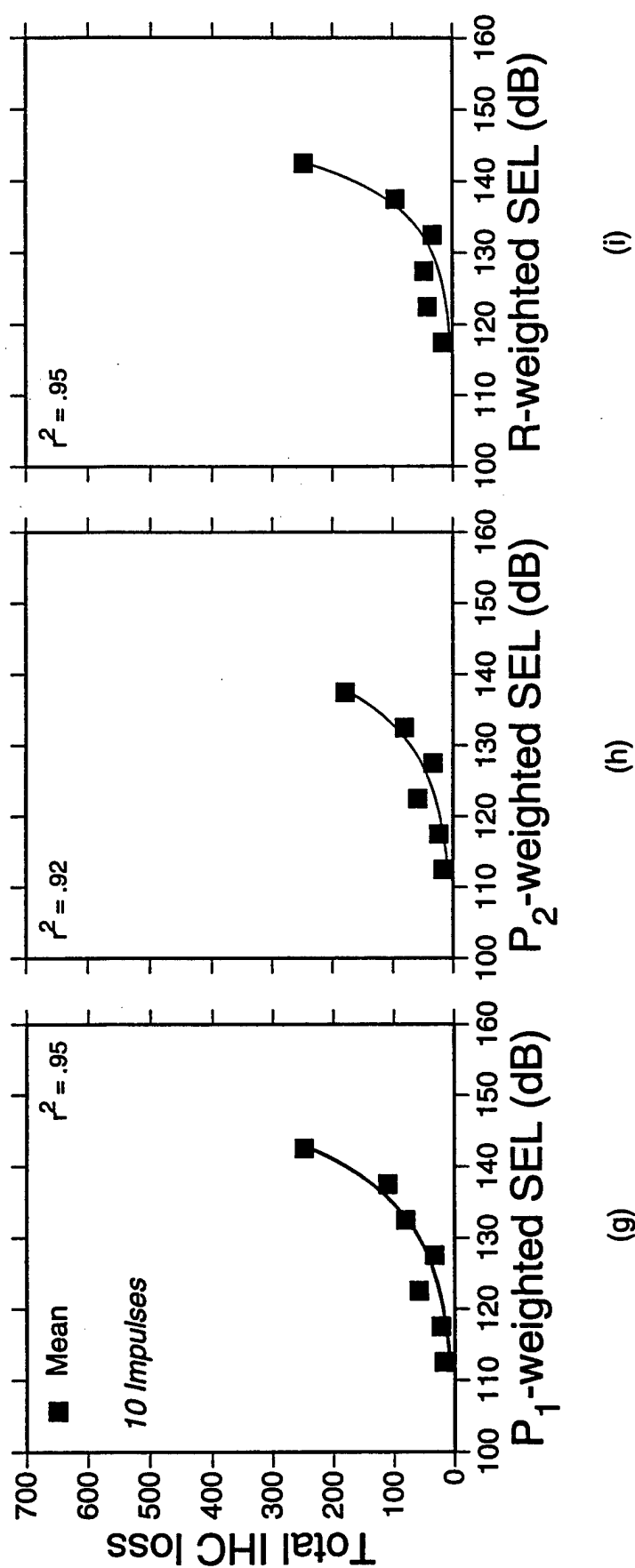
determination)

Figure 49 (d-f)   The mean total IHC loss for all animals exposed to 10 impulses falling within 5 dB bins of the indicated

level of the hazard index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL. The solid

line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of

Equation (20) corresponding to each regression line are listed in Table 12. (r^2 = coefficient of

determination)

Figure 49 (g-i)   The mean total IHC loss for all animals exposed to 10 impulses falling within 5 dB bins of the indicated

level of the hazard index (g) P_1-weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL. The

solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C

of Equation (20) corresponding to each regression line are listed in Table 12. (r^2 = coefficient of
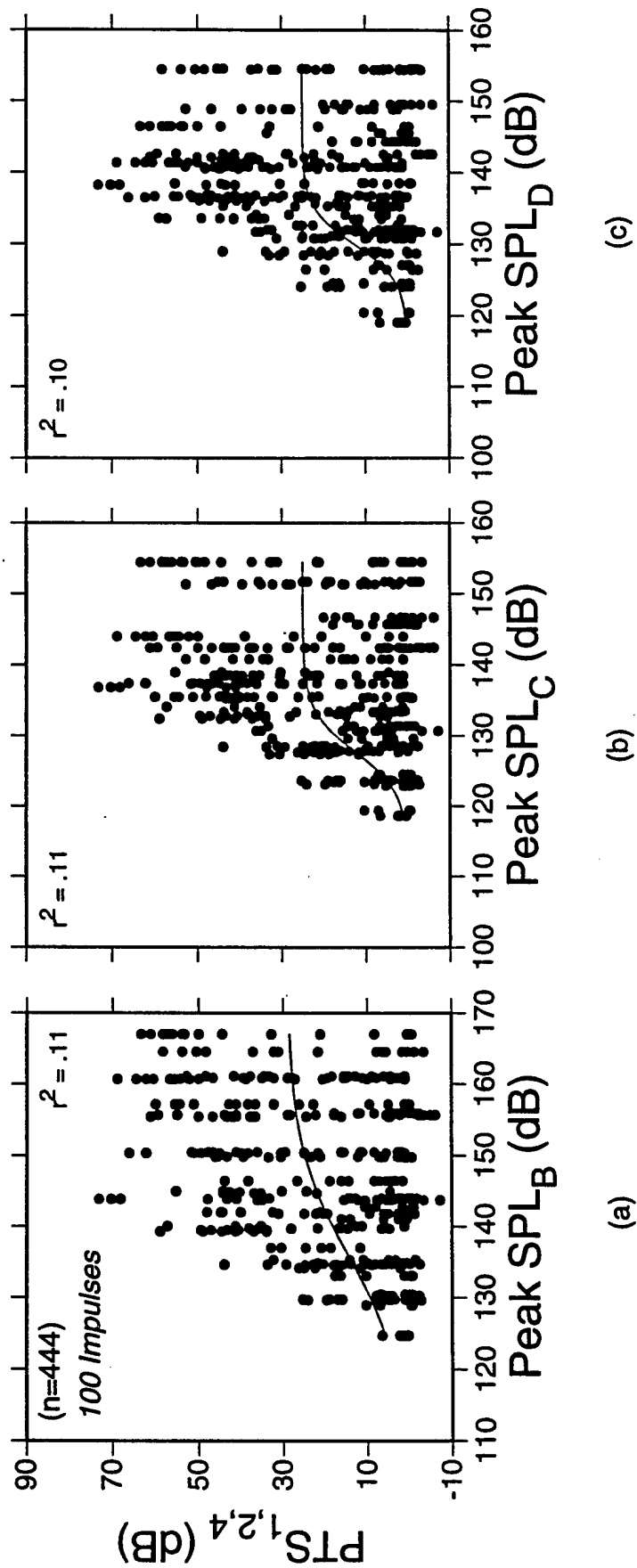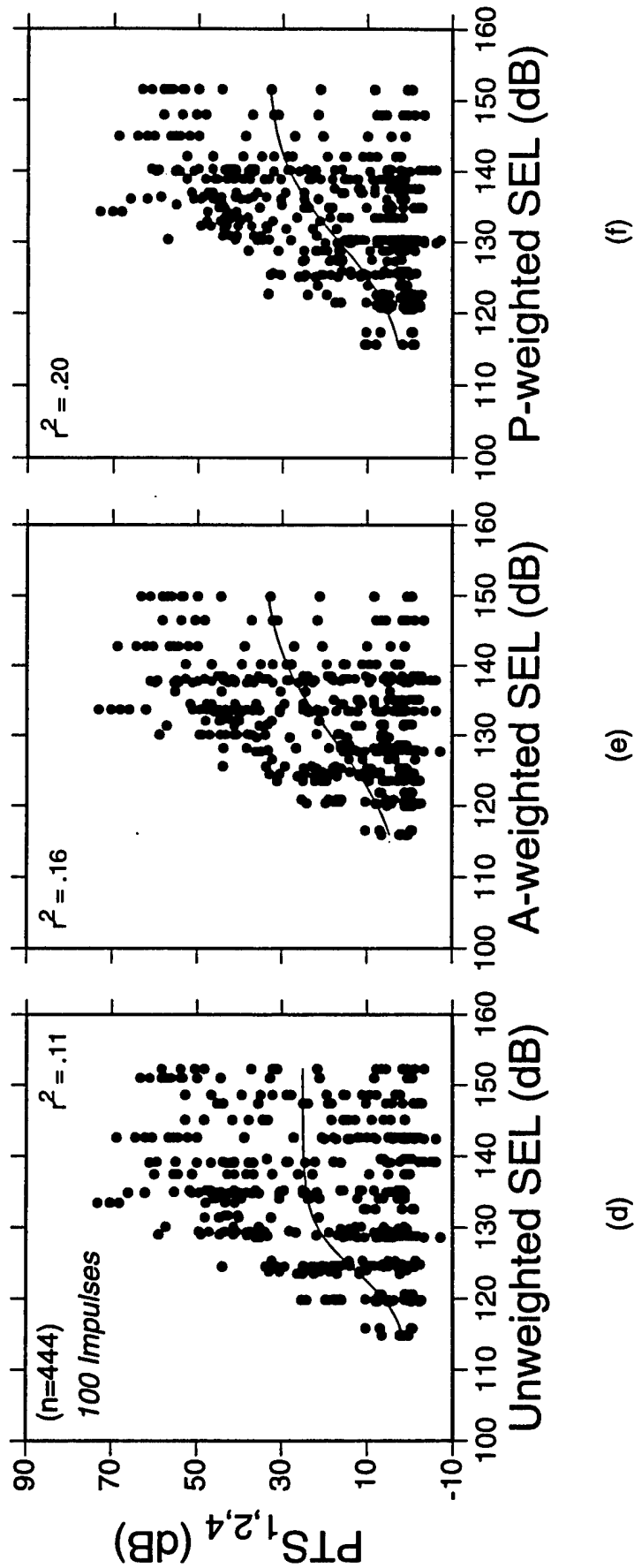
determination)

Figure 50 (a-c)   Average PTS measured at the 1, 2, and 4 kHz test frequencies of each animal exposed to 100

impulses (n=444) at the indicated level of the hazard index (a) Peak SPL$_B$, (b) Peak SPL$_C$, and (c)

Peak SPL$_D$.   The solid line is the nonlinear regression fit of Equation (20) to the data.   The three

parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 13.

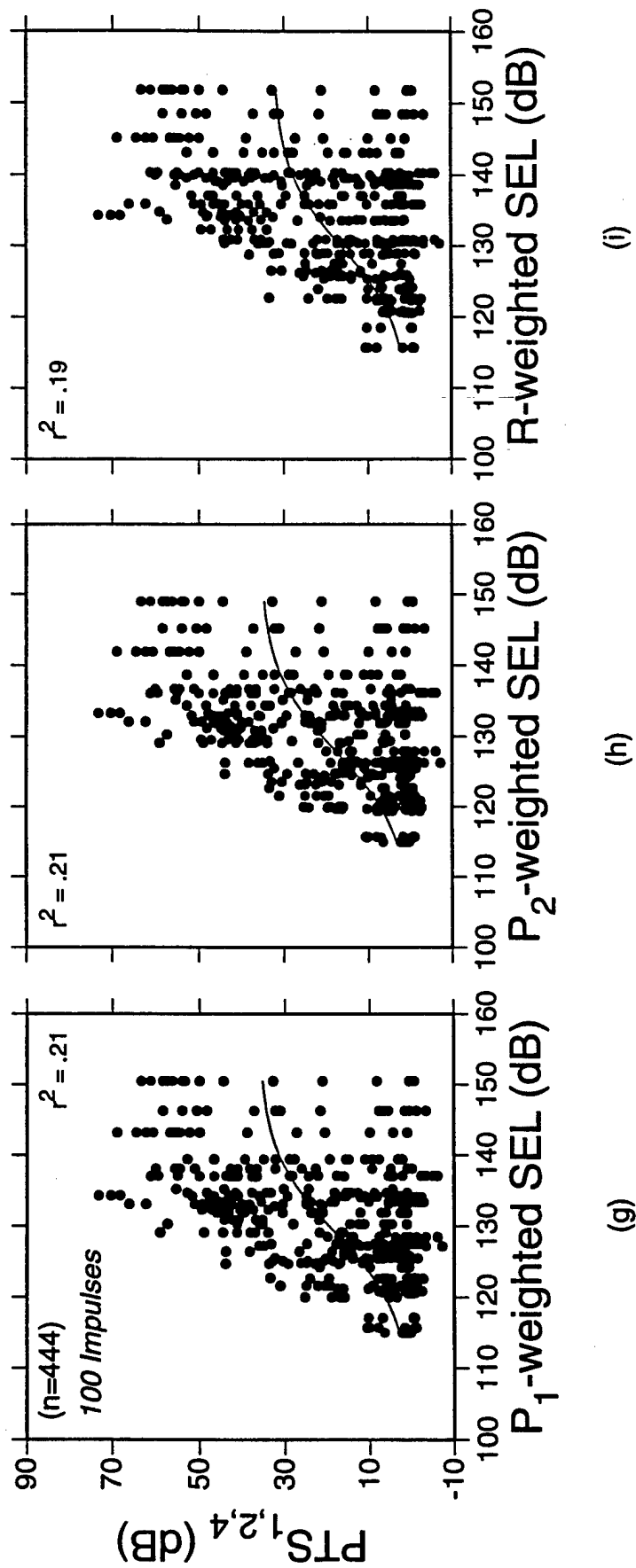(r^2 = coefficient of determination)

Figure 50 (d-f) Average PTS measured at the 1, 2, and 4 kHz test frequencies of each animal exposed to 100 impulses (n=444) at the indicated level of the hazard index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 13. (r^2 = coefficient of determination)

Figure 50 (g-i)   Average PTS measured at the 1, 2, and 4 kHz test frequencies of each animal exposed to 100

impulses (n=444) at the indicated level of the hazard index (g) P_1-weighted SEL, (h) P_2-weighted SEL,

and (i) R-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the data. The

three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in

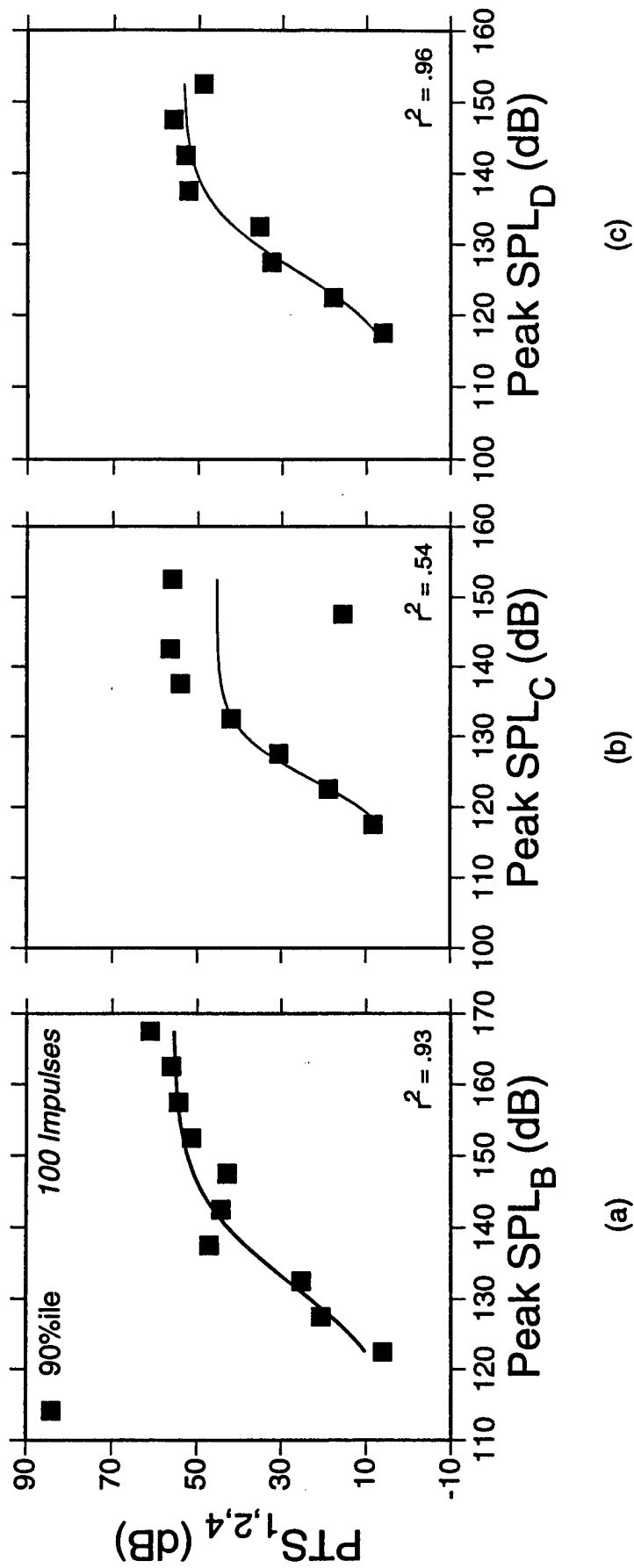Table 13. (r^2 = coefficient of determination)

Figure 51 (a-c) The 90th percentile average PTS measured at the 1, 2, and 4 kHz test frequencies for all animals exposed to 100 impulses falling within 5 dB bins of the indicated level of the hazard index (a) Peak SPL_B, (b) Peak SPL_C, and (c) Peak SPL_D. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 13. (r^2 = coefficient of determination)
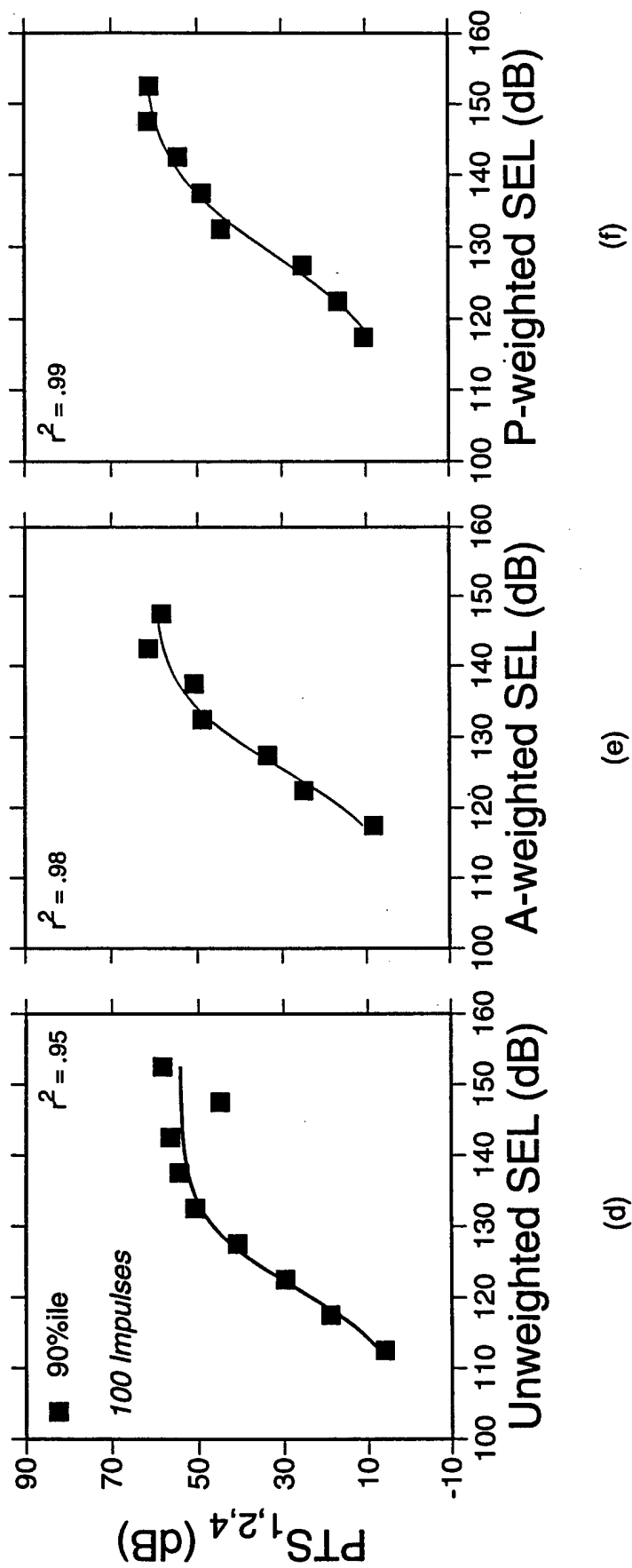
Figure 51 (d-f)   The 90th percentile average PTS measured at the 1, 2, and 4 kHz test frequencies for all animals

exposed to 100 impulses falling within 5 dB bins of the indicated level of the hazard index (d)

Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL.   The solid line is the nonlinear

regression fit of Equation (20) to the data.   The three parameters, A, B, and C of Equation (20)

corresponding to each regression line are listed in Table 13. (r^2 = coefficient of determination)
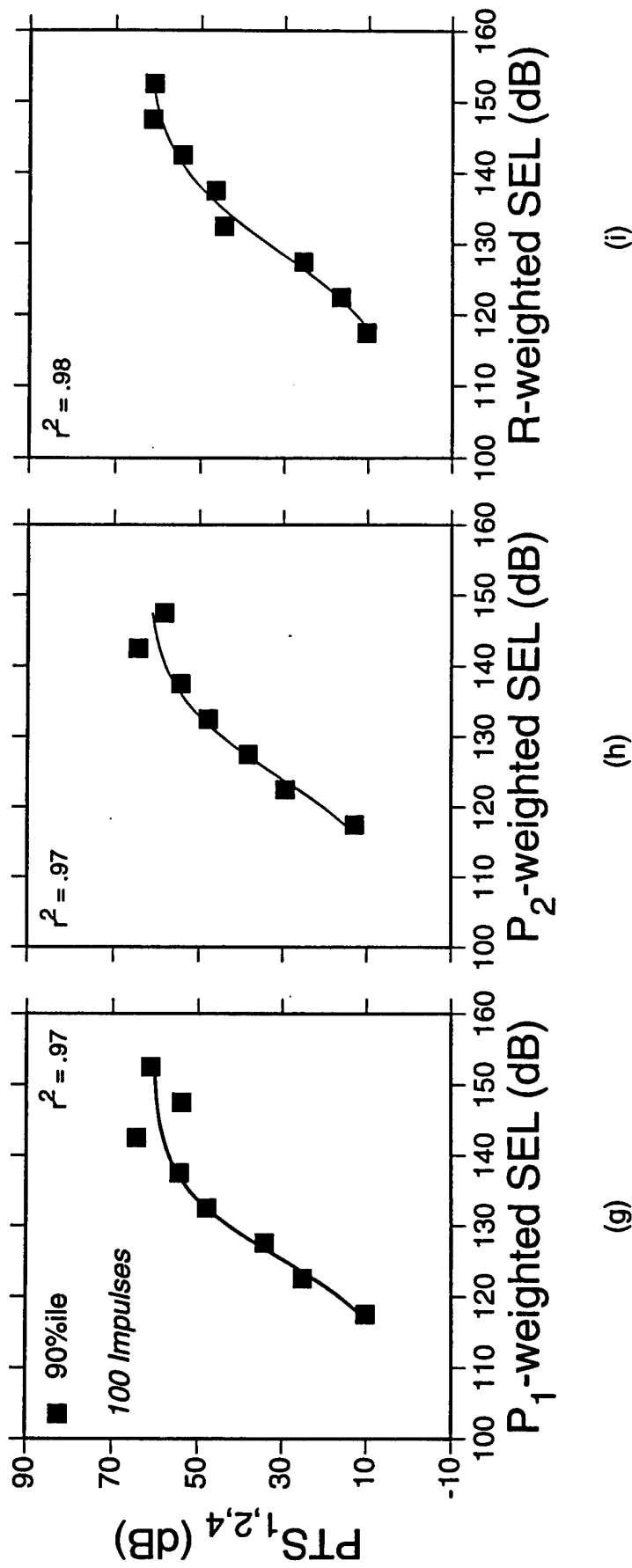
Figure 51 (g-i)   The 90th percentile average PTS measured at the 1, 2, and 4 kHz test frequencies for all animals exposed to 100 impulses falling within 5 dB bins of the indicated level of the hazard index (g) P_1 - weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL.   The solid line is the nonlinear regression fit of Equation (20) to the data.   The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 13. (r^2 = coefficient of determination)
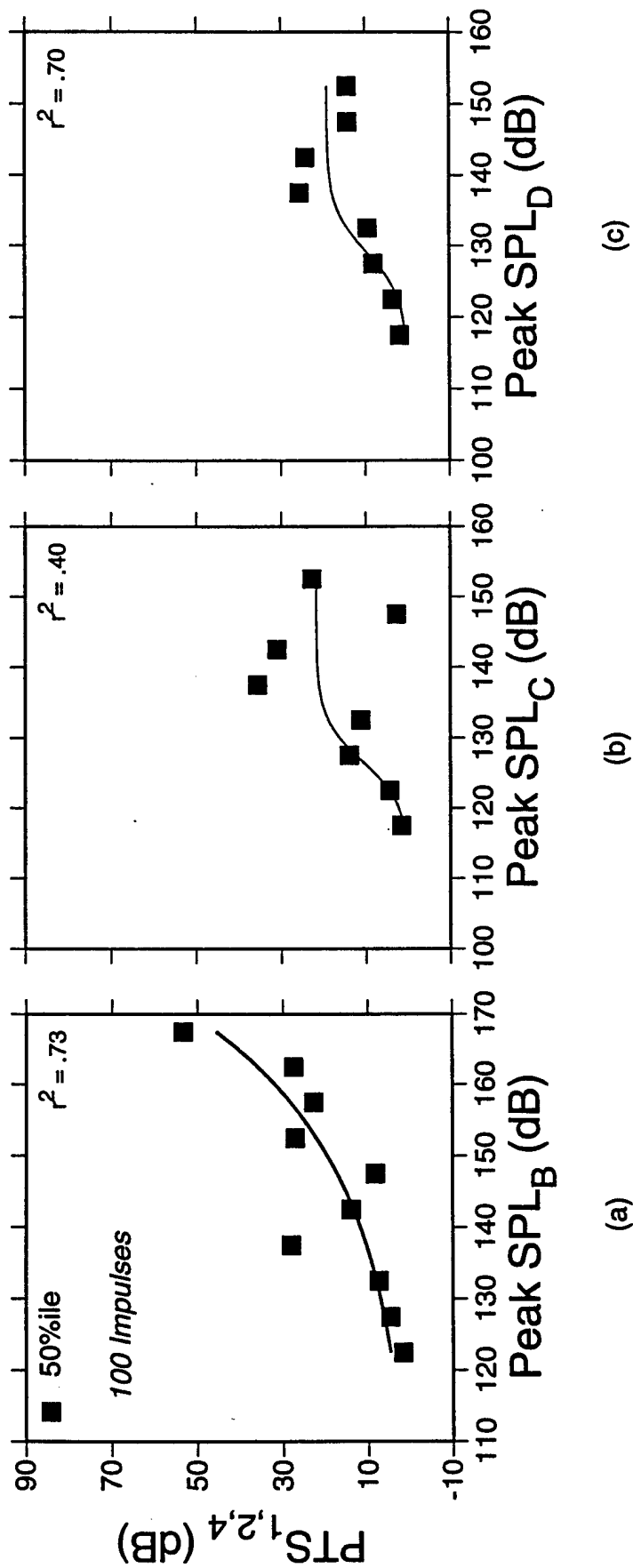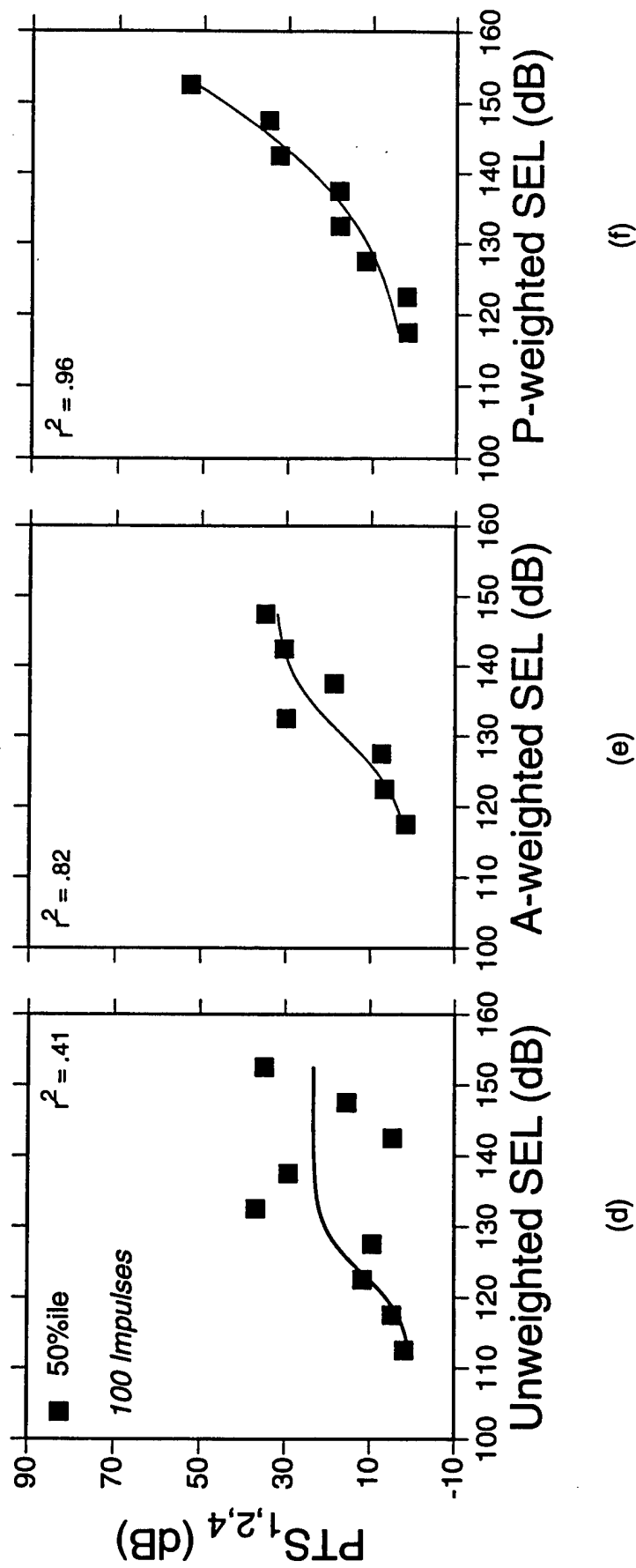
Figure 52 (a-c) The 50th percentile average PTS measured at the 1, 2, and 4 kHz test frequencies for all animals

exposed to 100 impulses falling within 5 dB bins of the indicated level of the hazard index (a) Peak

SPL$_B$, (b) Peak SPL$_C$, and (c) Peak SPL$_D$. The solid line is the nonlinear regression fit of Equation

(20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each

regression line are listed in Table 13. (r^2 = coefficient of determination)
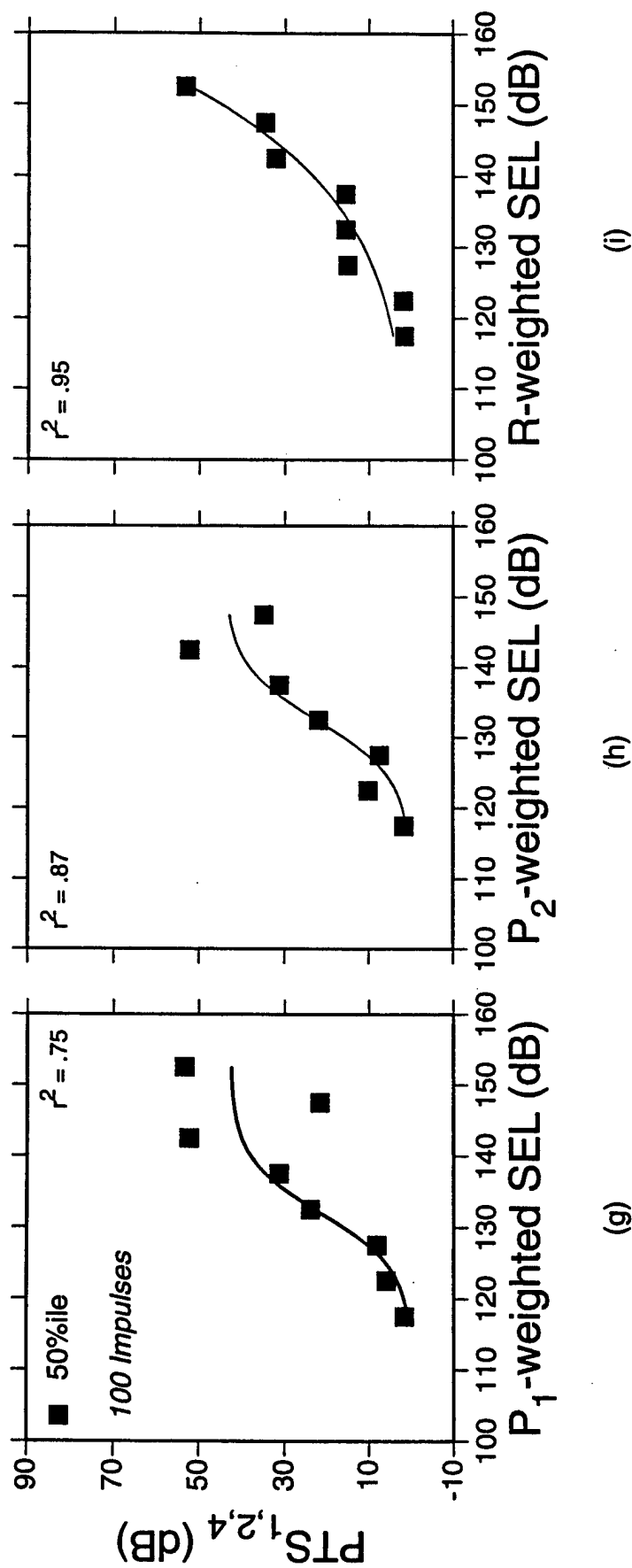
Figure 52 (d-f)   The 50th percentile average PTS measured at the 1, 2, and 4 kHz test frequencies for all animals

exposed to 100 impulses falling within 5 dB bins of the indicated level of the hazard index (d)

Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL.   The solid line is the nonlinear

regression fit of Equation (20) to the data.   The three parameters, A, B, and C of Equation (20)

corresponding to each regression line are listed in Table 13. (r^2 = coefficient of determination)

Figure 52 (g-i)   The 50th percentile average PTS measured at the 1, 2, and 4 kHz test frequencies for all animals exposed to 100 impulses falling within 5 dB bins of the indicated level of the hazard index (g) P_1-weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 13. (r^2 = coefficient of determination)
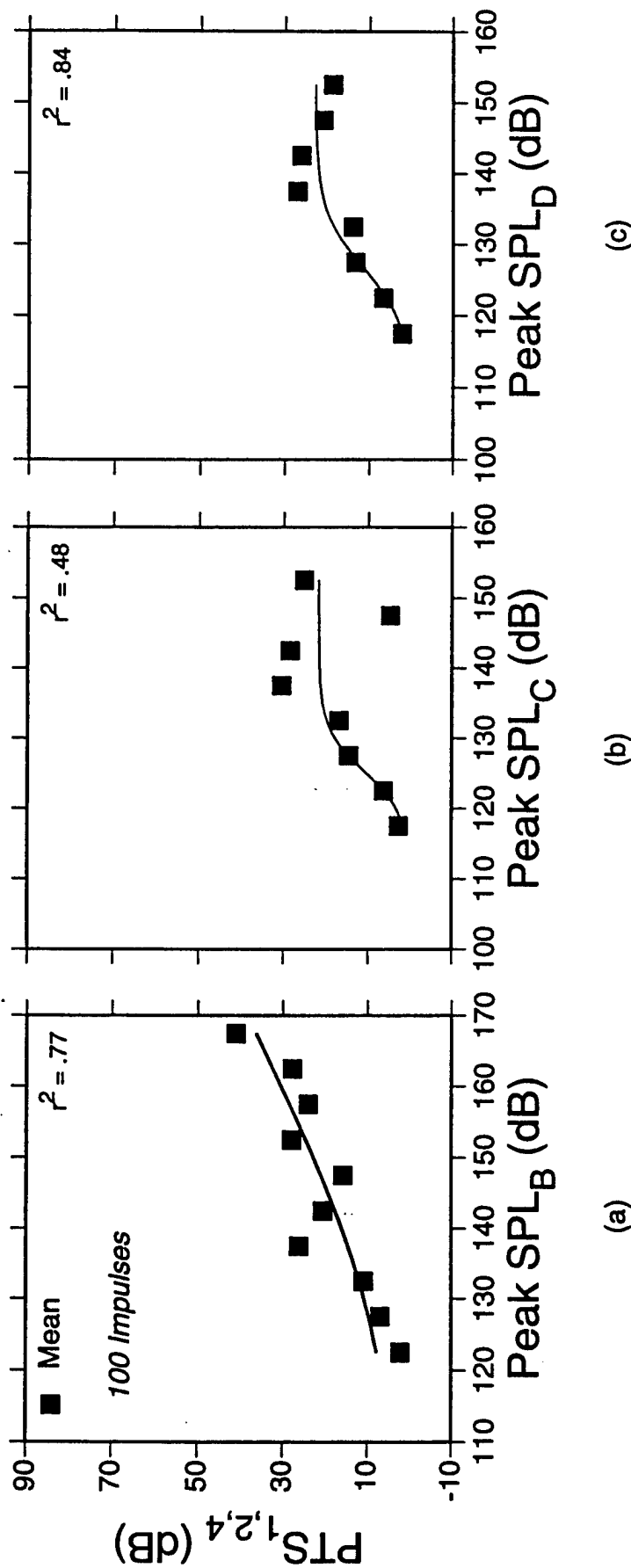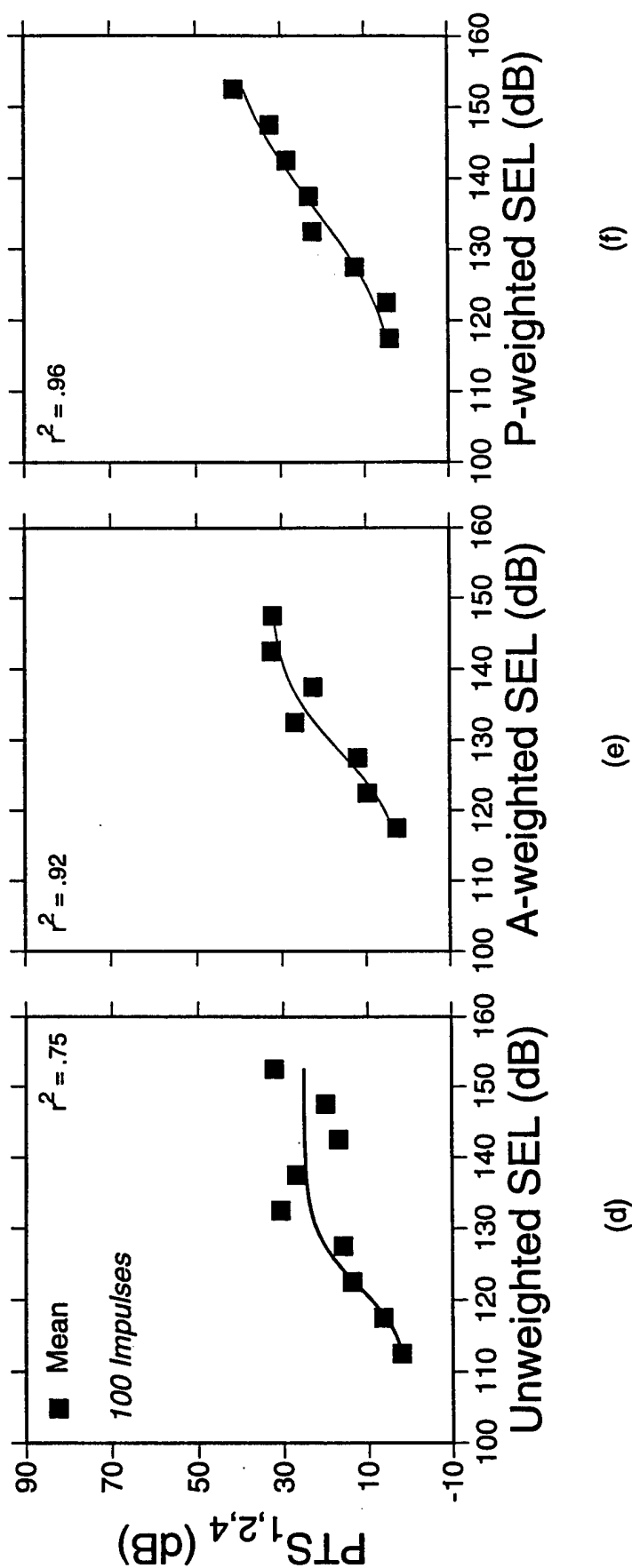
Figure 53 (a-c)   The mean average PTS measured at the 1, 2, and 4 kHz test frequencies for all animals exposed to

100 impulses falling within 5 dB bins of the indicated level of the hazard index (a) Peak SPL$_B$, (b)

Peak SPL$_C$, and (c) Peak SPL$_D$. The solid line is the nonlinear regression fit of Equation (20) to the

data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line

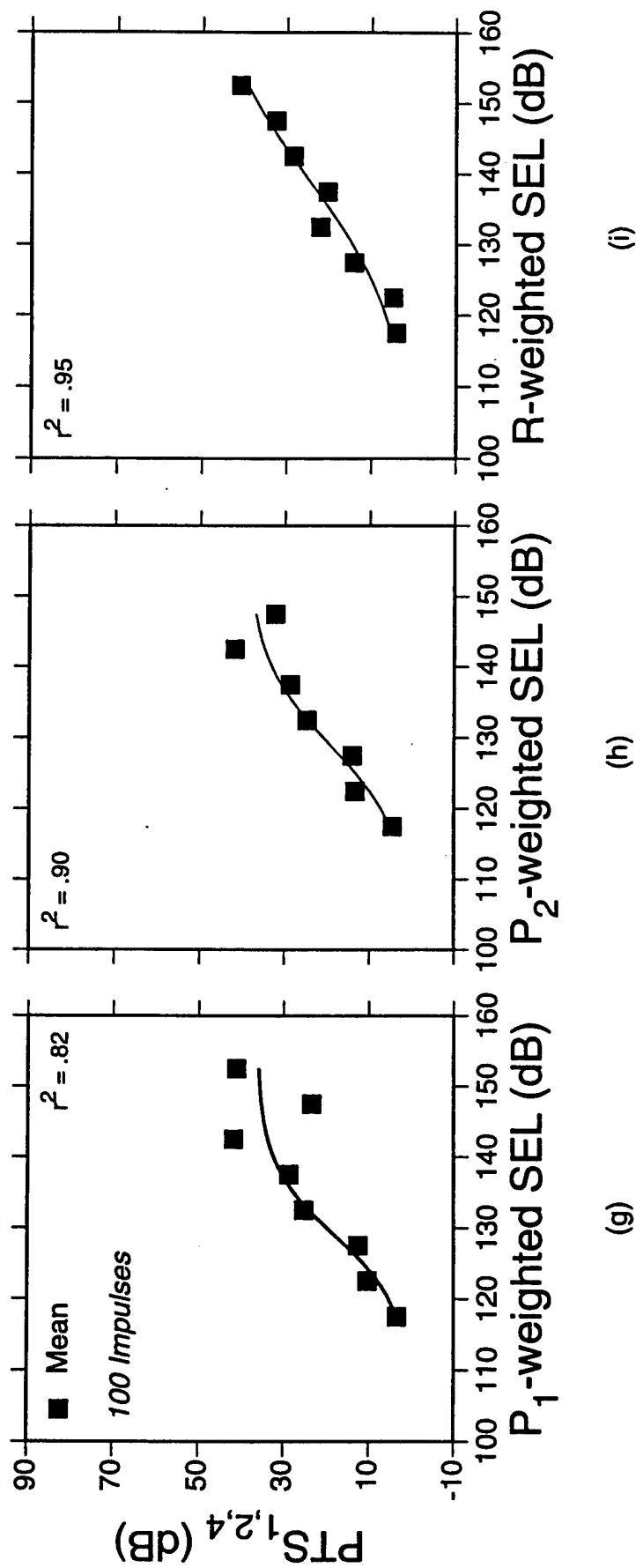are listed in Table 13. (r^2 = coefficient of determination)

Figure 53 (d-f)   The mean average PTS measured at the 1, 2, and 4 kHz test frequencies for all animals exposed to

100 impulses falling within 5 dB bins of the indicated level of the hazard index (d) Unweighted SEL, (e)

A-weighted SEL, and (f) P-weighted SEL.   The solid line is the nonlinear regression fit of Equation (20)

to the data.   The three parameters, A, B, and C of Equation (20) corresponding to each regression line

are listed in Table 13. (r^2 = coefficient of determination)

Figure 53 (g-i)   The mean average PTS measured at the 1, 2, and 4 kHz test frequencies for all animals exposed to

100 impulses falling within 5 dB bins of the indicated level of the hazard index (g) P_1-weighted SEL, (h)

P_2-weighted SEL, and (i) R-weighted SEL.   The solid line is the nonlinear regression fit of Equation

(20) to the data.   The three parameters, A, B, and C of Equation (20) corresponding to each regression

line are listed in Table 13. (r^2 = coefficient of determination)
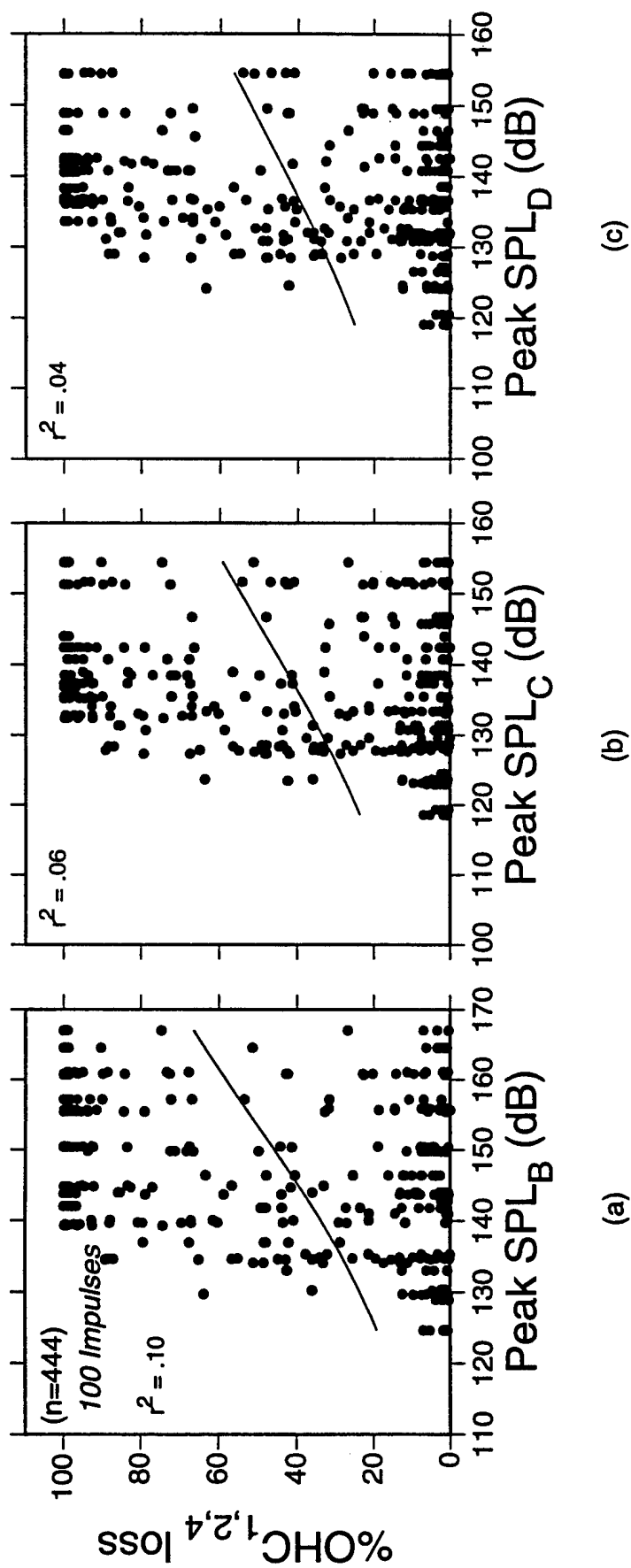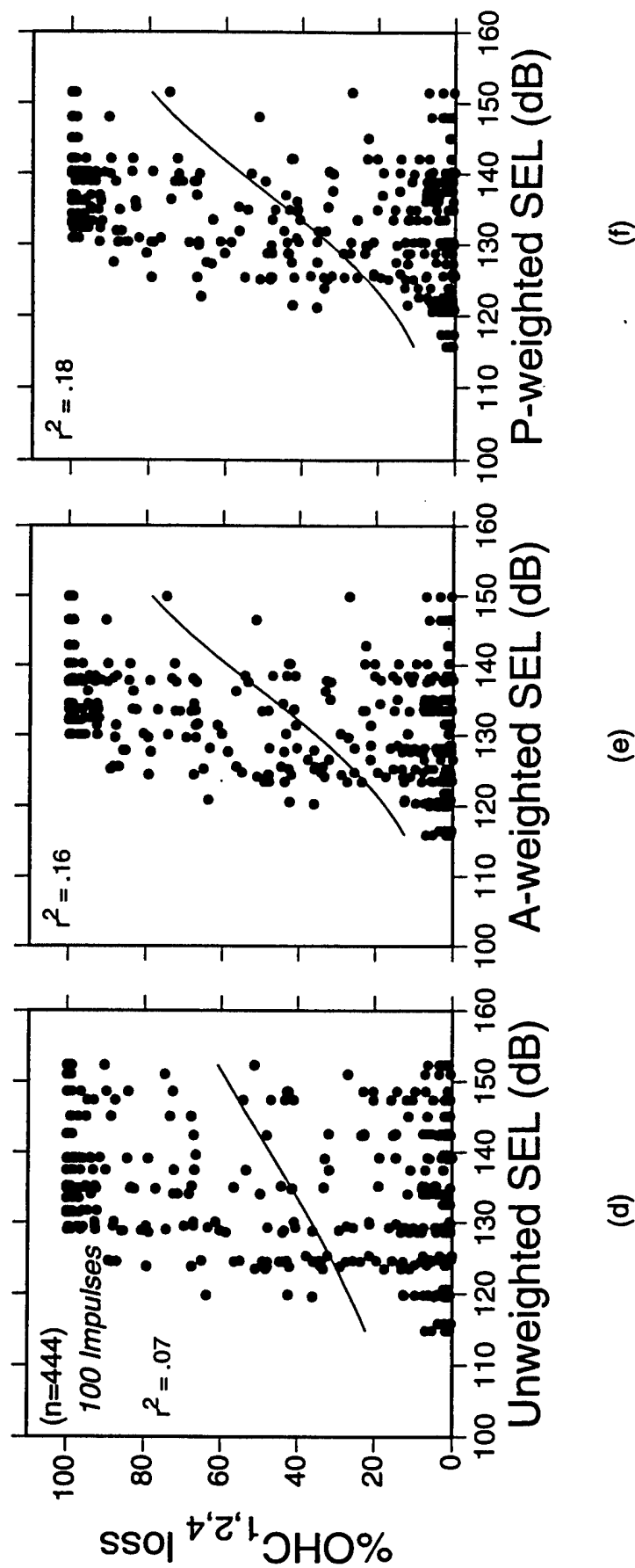
Figure 54 (a-c)   The average percent OHC loss in the cochlea over octave-band lengths of the basilar membrane

centered at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for all

animals exposed to 100 impulses (n=444) at the indicated level of the hazard index (a) Peak SPL$_B$,

(b) Peak SPL$_C$, and (c) Peak SPL$_D$. The solid line is the nonlinear regression fit of Equation (20) to

the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line

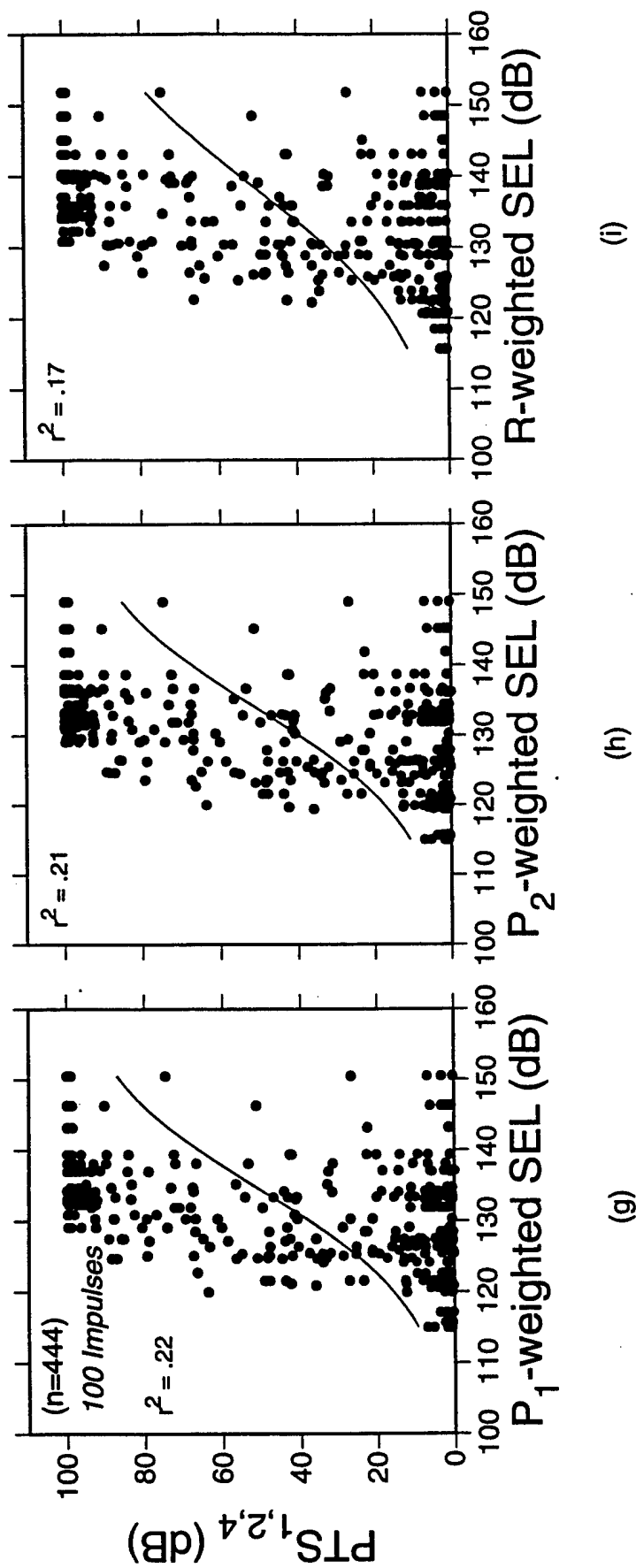are listed in Table14. (r^2 = coefficient of determination)

Figure 54 (d-f) The average percent OHC loss in the cochlea over octave-band lengths of the basilar membrane

centered at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for all

animals exposed to 100 impulses (n=444) at the indicated level of the hazard index (d) Unweighted

SEL, (e) A-weighted SEL, and (f) P-weighted SEL. The solid line is the nonlinear regression fit of

Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each

regression line are listed in Table 14. (r^2 = coefficient of determination)

Figure 54 (g-i)   The average percent OHC loss in the cochlea over octave-band lengths of the basilar membrane

centered at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for all

animals exposed to 100 impulses (n=444) at the indicated level of the hazard index (g) P_1-weighted

SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL.   The solid line is the nonlinear regression fit of

Equation (20) to the data.   The three parameters, A, B, and C of Equation (20) corresponding to

each regression line are listed in Table 14. (r^2 = coefficient of determination)
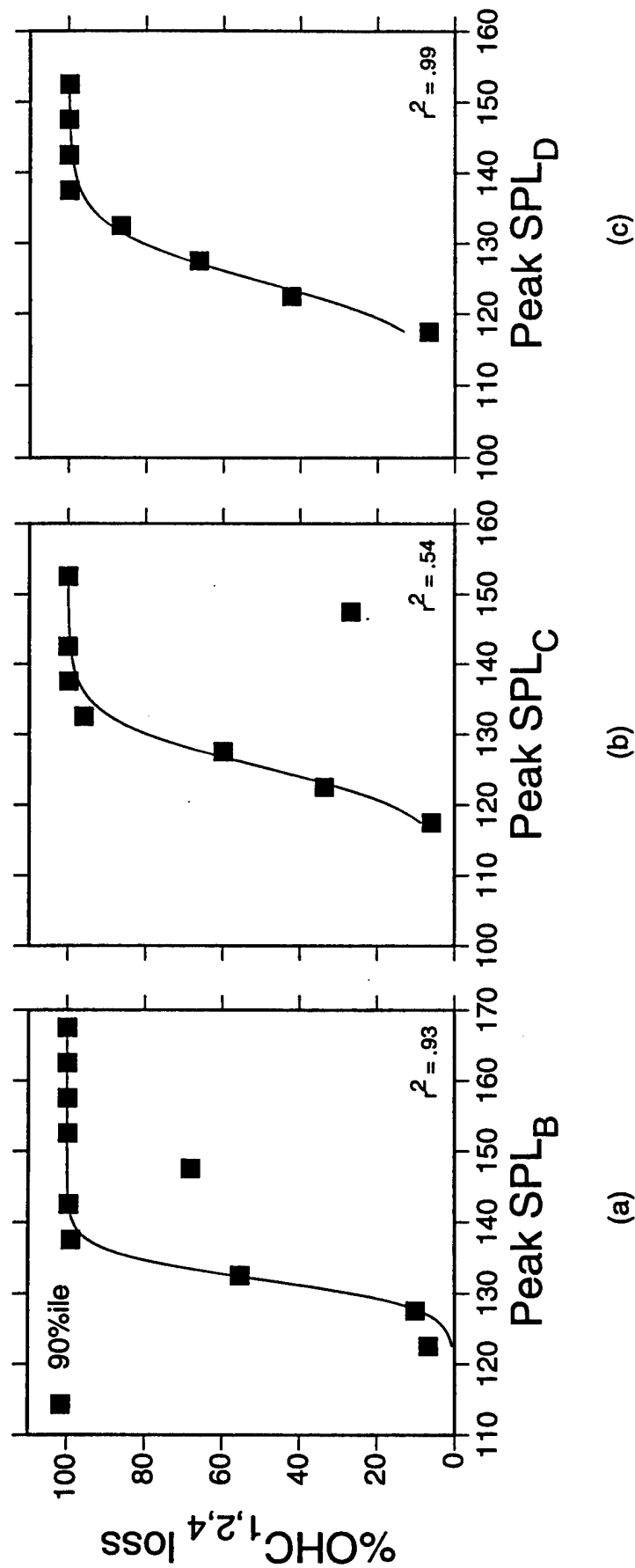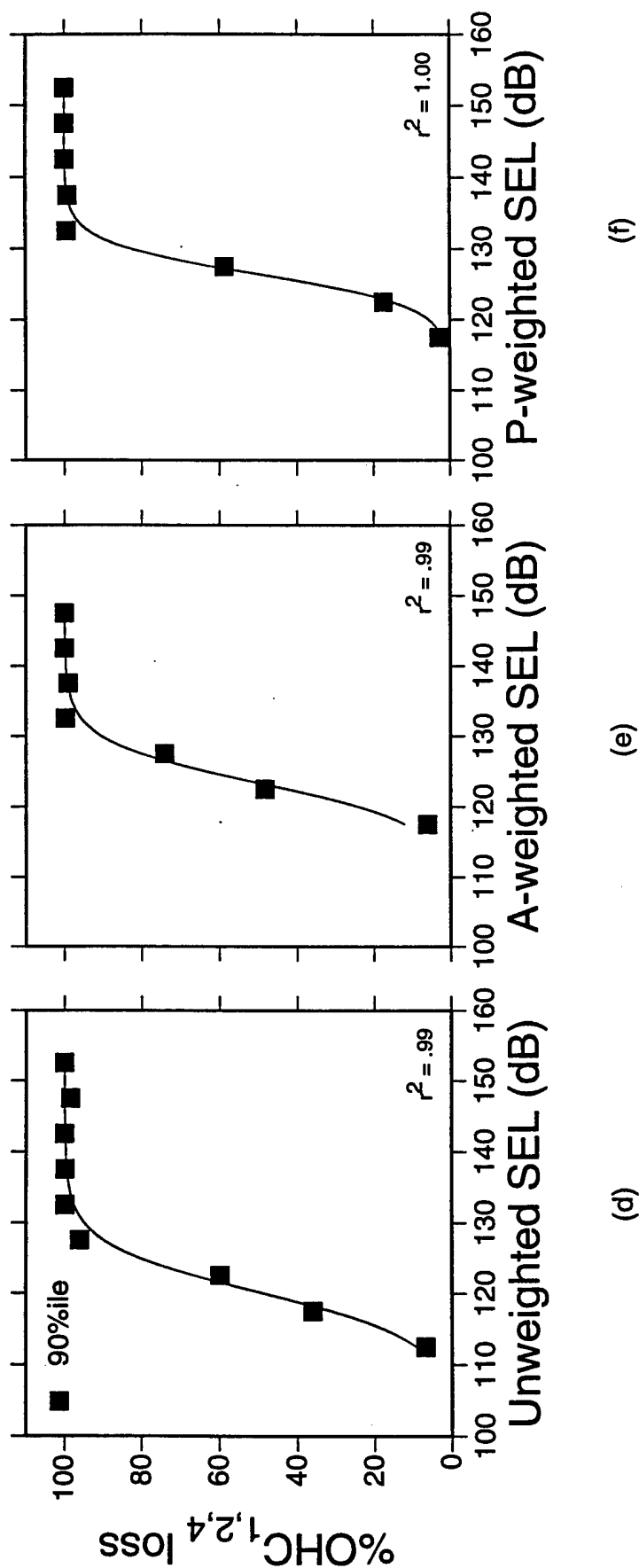
Figure 55 (a-c)   The 90th percentile of percent OHC loss in the cochlea over octave-band lengths of the basilar

membrane centered at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies

for all animals exposed to 100 impulses falling within 5 dB bins of the indicated level of the hazard

index (a) Peak SPL_B, (b) Peak SPL_C, and (c) Peak SPL_D.   The solid line is the nonlinear regression fit

of Equation (20) to the data.   The three parameters, A, B, and C of Equation (20) corresponding to

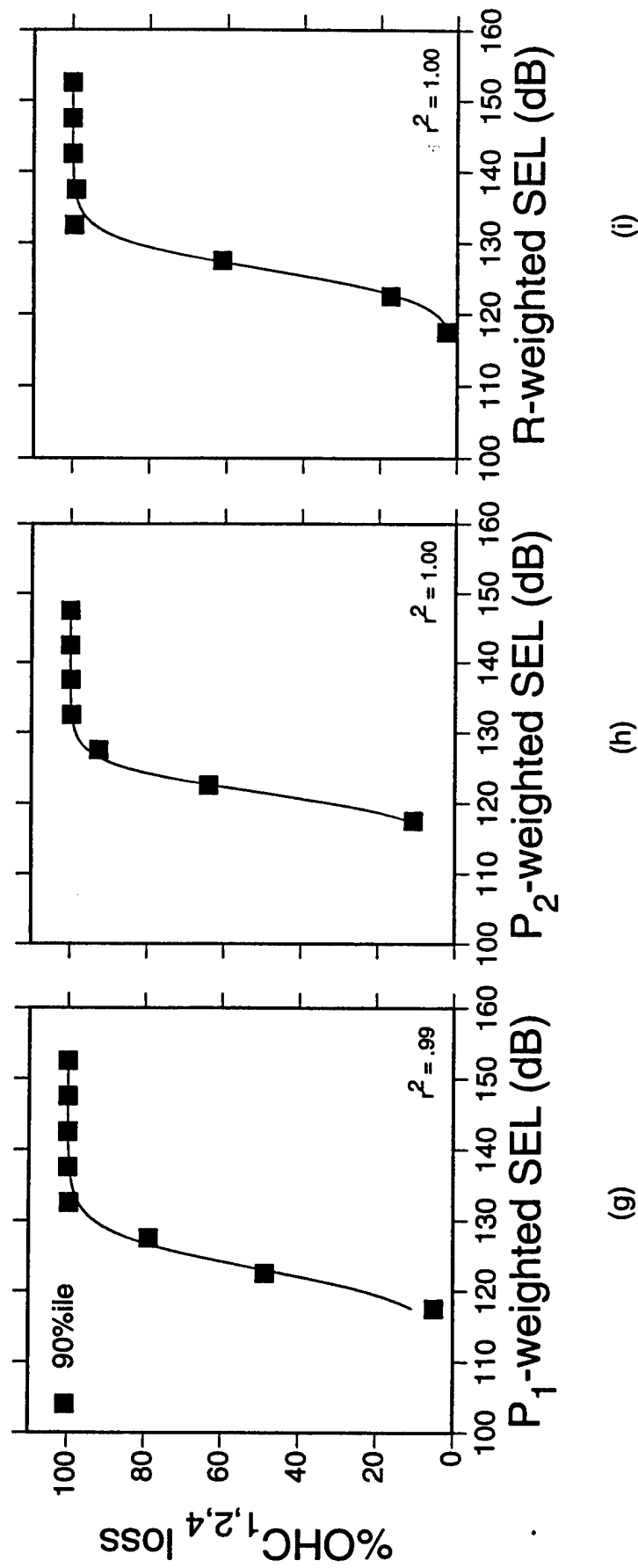each regression line are listed in Table 14. (r^2 = coefficient of determination)

Figure 55 (d-f)   The 90th percentile of percent OHC loss in the cochlea over octave-band lengths of the basilar

membrane centered at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for

all animals exposed to 100 impulses falling within 5 dB bins of the indicated level of the hazard index (d)

Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL.   The solid line is the nonlinear regression

fit of Equation (20) to the data.   The three parameters, A, B, and C of Equation (20) corresponding to each

regression line are listed in Table 14. (r^2 = coefficient of determination)
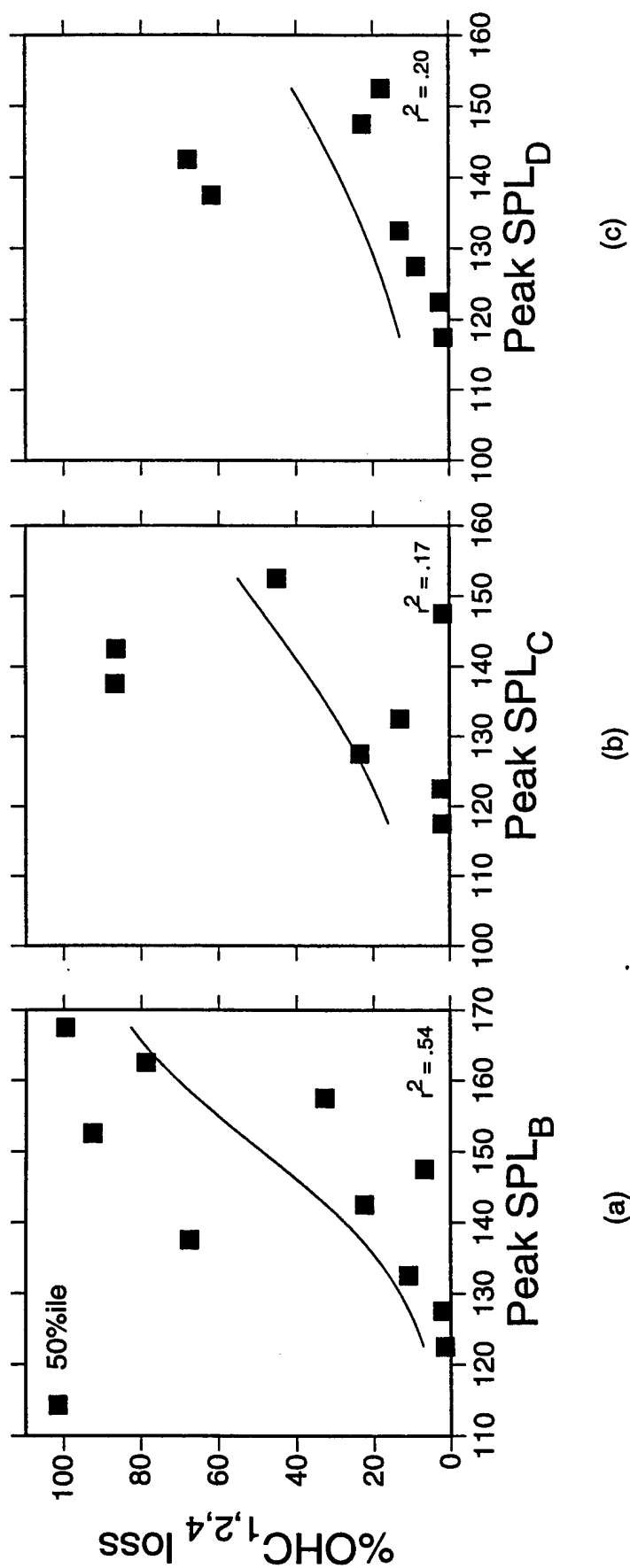
Figure 55 (g-i)   The 90th percentile of percent OHC loss in the cochlea over octave-band lengths of the basilar

membrane centered at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for

all animals exposed to 100 impulses falling within 5 dB bins of the indicated level of the hazard index (g)

P1-weighted SEL, (h) P2-weighted SEL, and (i) R-weighted SEL.   The solid line is the nonlinear regression

fit of Equation (20) to the data.   The three parameters, A, B, and C of Equation (20) corresponding to each

regression line are listed in Table 14. (r^2 = coefficient of determination)
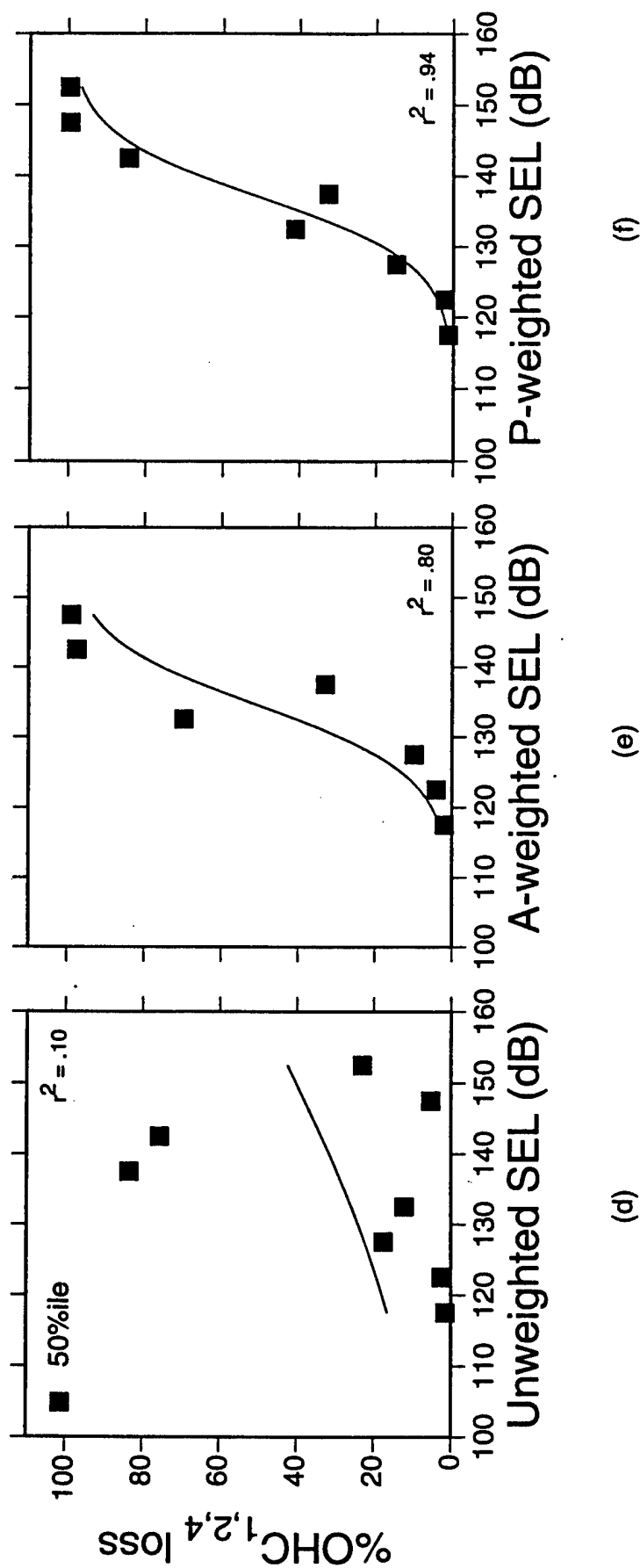
Figure 56 (a-c) The 50th percentile of percent OHC loss in the cochlea over octave-band lengths of the basilar

membrane centered at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies

for all animals exposed to 100 impulses falling within 5 dB bins of the indicated level of the hazard

index (a) Peak SPL$_B$, (b) Peak SPL$_C$, and (c) Peak SPL$_D$. The solid line is the nonlinear regression fit

of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to

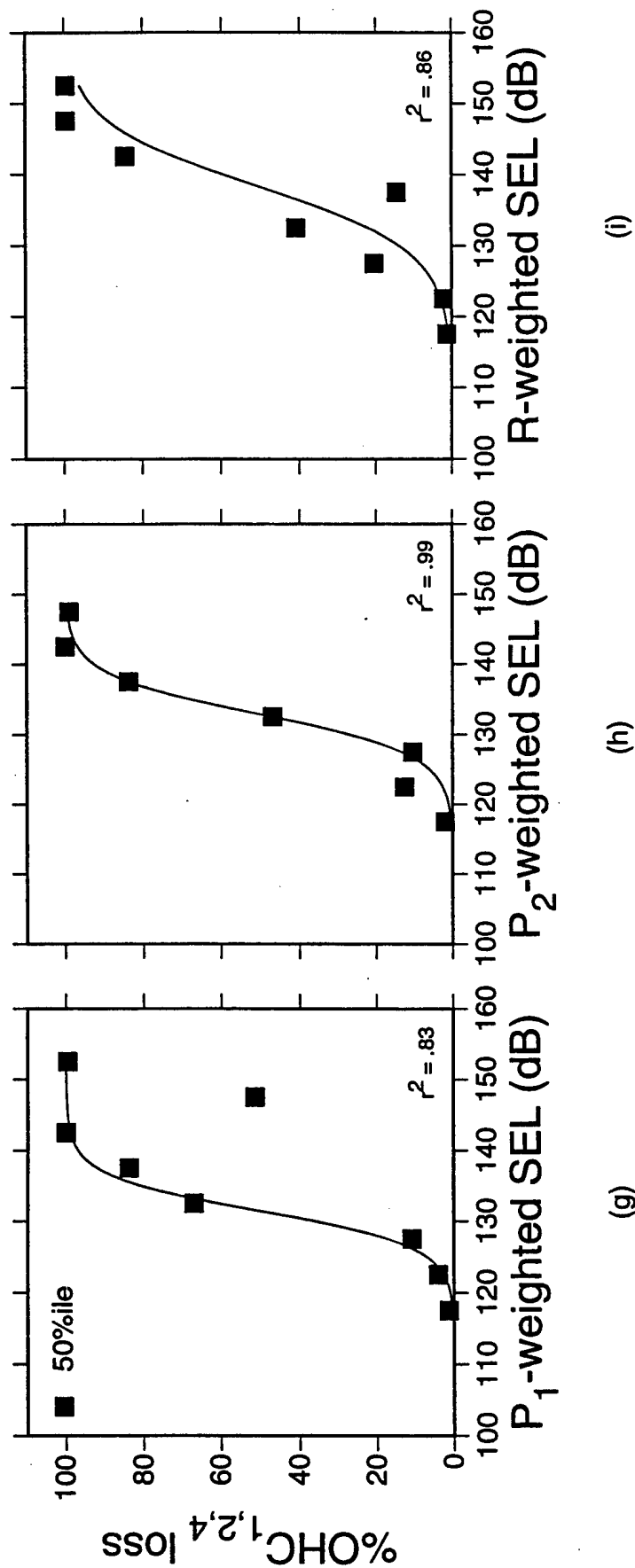each regression line are listed in Table 14. (r^2 = coefficient of determination)

Figure 56 (d-f) The 50th percentile of percent OHC loss in the cochlea over octave-band lengths of the basilar membrane centered at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for all animals exposed to 100 impulses falling within 5 dB bins of the indicated level of the hazard index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 14. (r^2 = coefficient of determination)
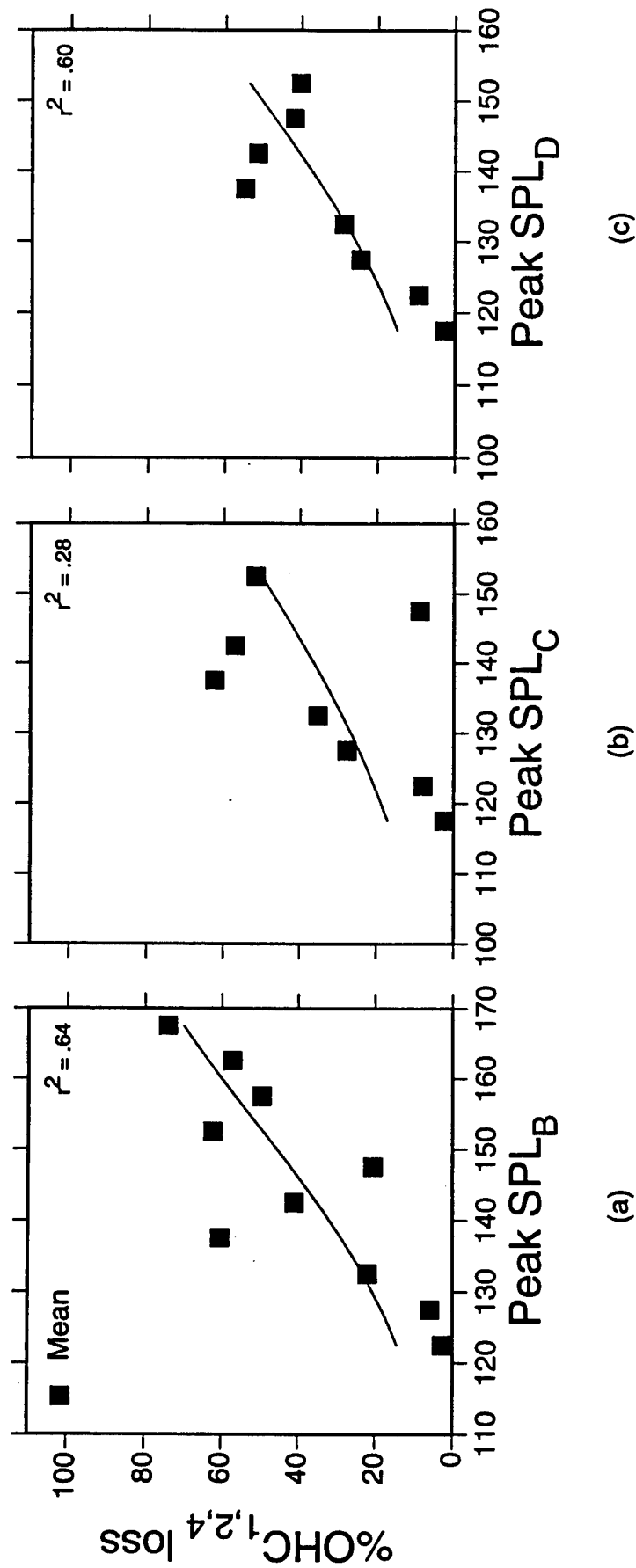
Figure 56 (g-i) The 50th percentile of percent OHC loss in the cochlea over octave-band lengths of the basilar membrane centered at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for all animals exposed to 100 impulses falling within 5 dB bins of the indicated level of the hazard index (g) P_1-weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 14. (r^2 = coefficient of determination)
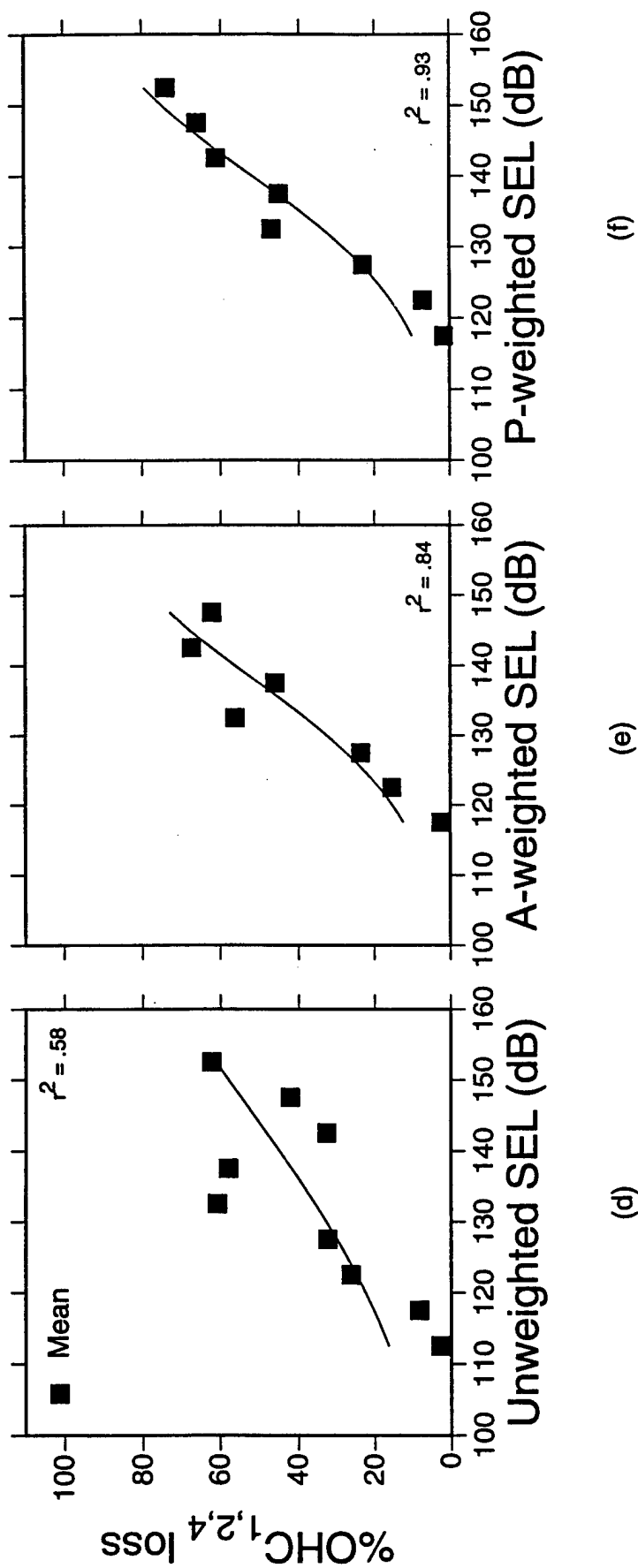
Figure 57 (a-c) The mean percent OHC loss in the cochlea over octave-band lengths of the basilar membrane centered at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for all animals exposed to 100 impulses falling within 5 dB bins of the indicated level of the hazard index (a) Peak SPL_B, (b) Peak SPL_C, and (c) Peak SPL_D. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 14. (r^2 = coefficient of determination)
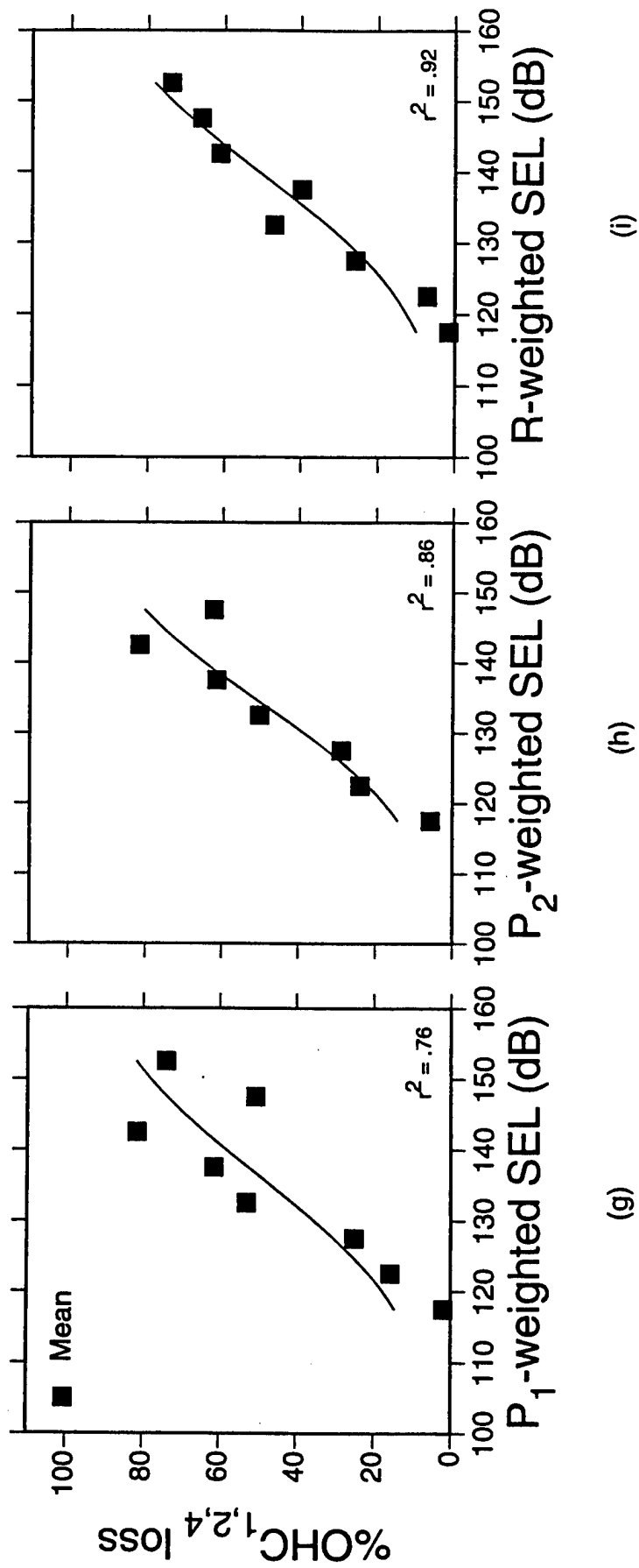
Figure 57 (d-f)   The mean percent OHC loss in the cochlea over octave-band lengths of the basilar membrane centered at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for all animals exposed to 100 impulses falling within 5 dB bins of the indicated level of the hazard index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL.   The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 14. (r^2 = coefficient of determination)
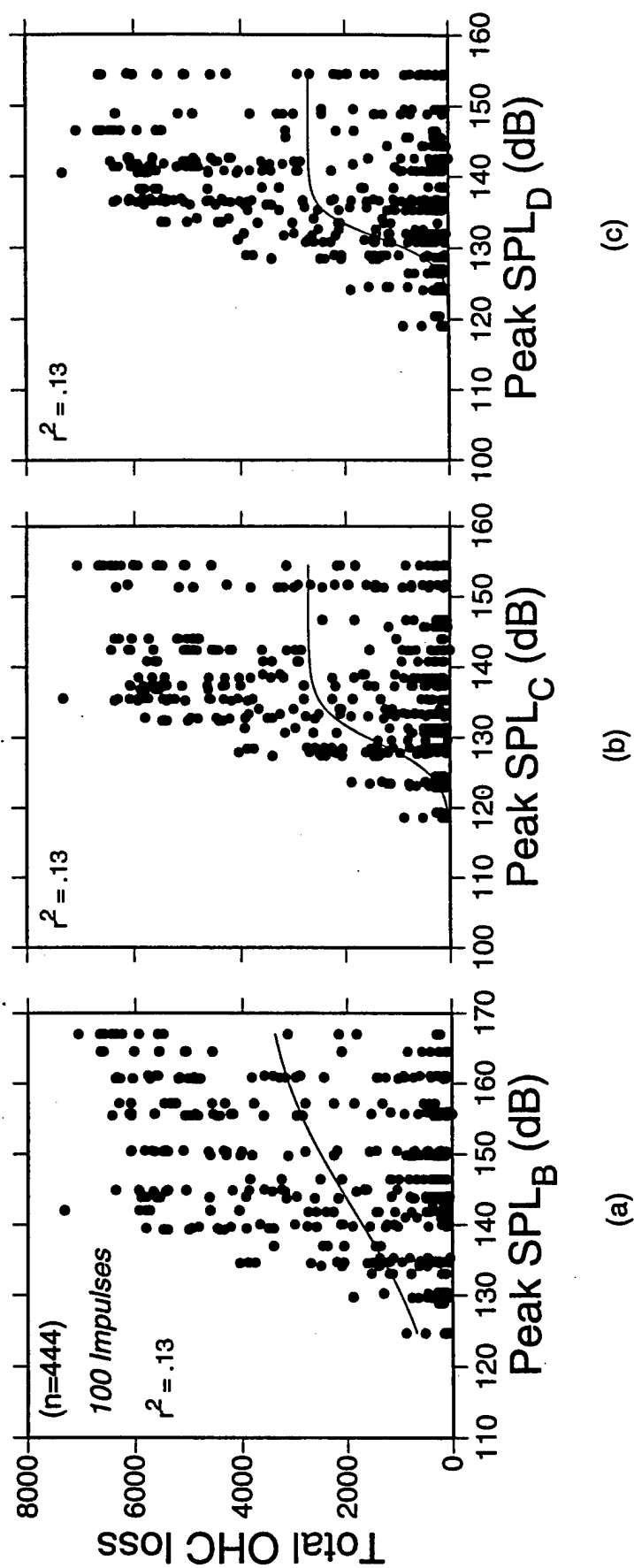
Figure 57 (g-i)   The mean percent OHC loss in the cochlea over octave-band lengths of the basilar membrane centered

at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for all animals exposed to

100 impulses falling within 5 dB bins of the indicated level of the hazard index (g) P_1-weighted SEL, (h) P_2-

weighted SEL, and (i) R-weighted SEL.   The solid line is the nonlinear regression fit of Equation (20) to

the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are

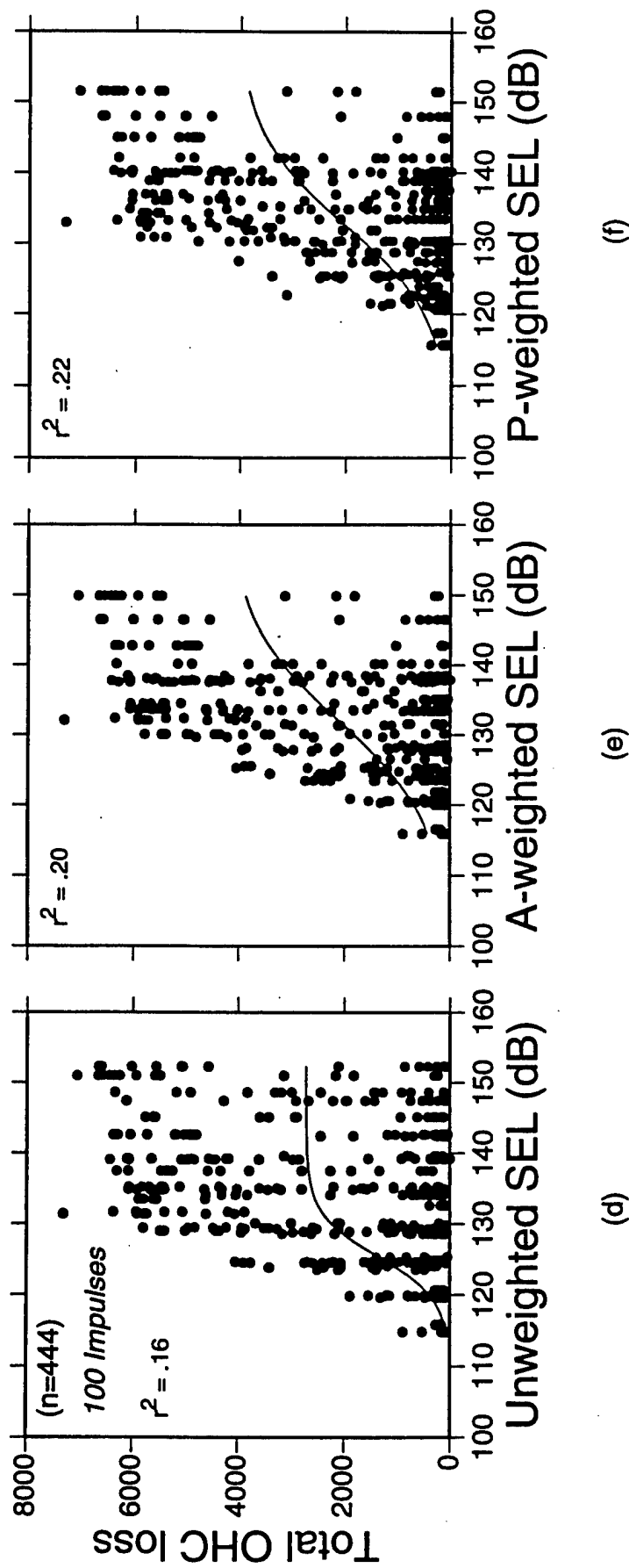listed in Table 14. (r^2 = coefficient of determination)

Figure 58 (a-c) Total OHC loss in the cochlea of each animal exposed to 100 impulses (n=444) at the indicated level

of the hazard index (a) Peak SPL$_B$, (b) Peak SPL$_C$, and (c) Peak SPL$_D$. The solid line is the nonlinear

regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20)

corresponding to each regression line are listed in Table 15. (r^2 = coefficient of determination)
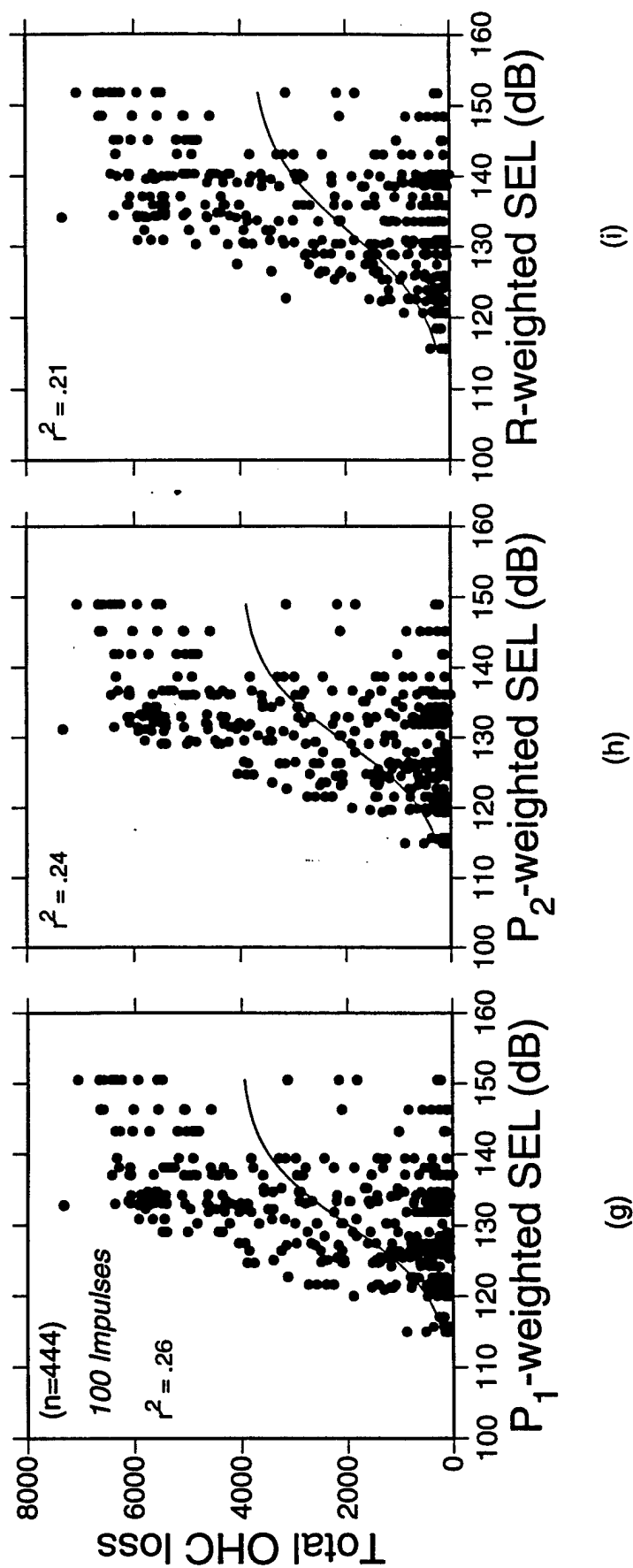
Figure 58 (d-f) Total OHC loss in the cochlea of each animal exposed to 100 impulses (n=444) at the indicated level of the hazard index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 15. (r^2 = coefficient of determination)
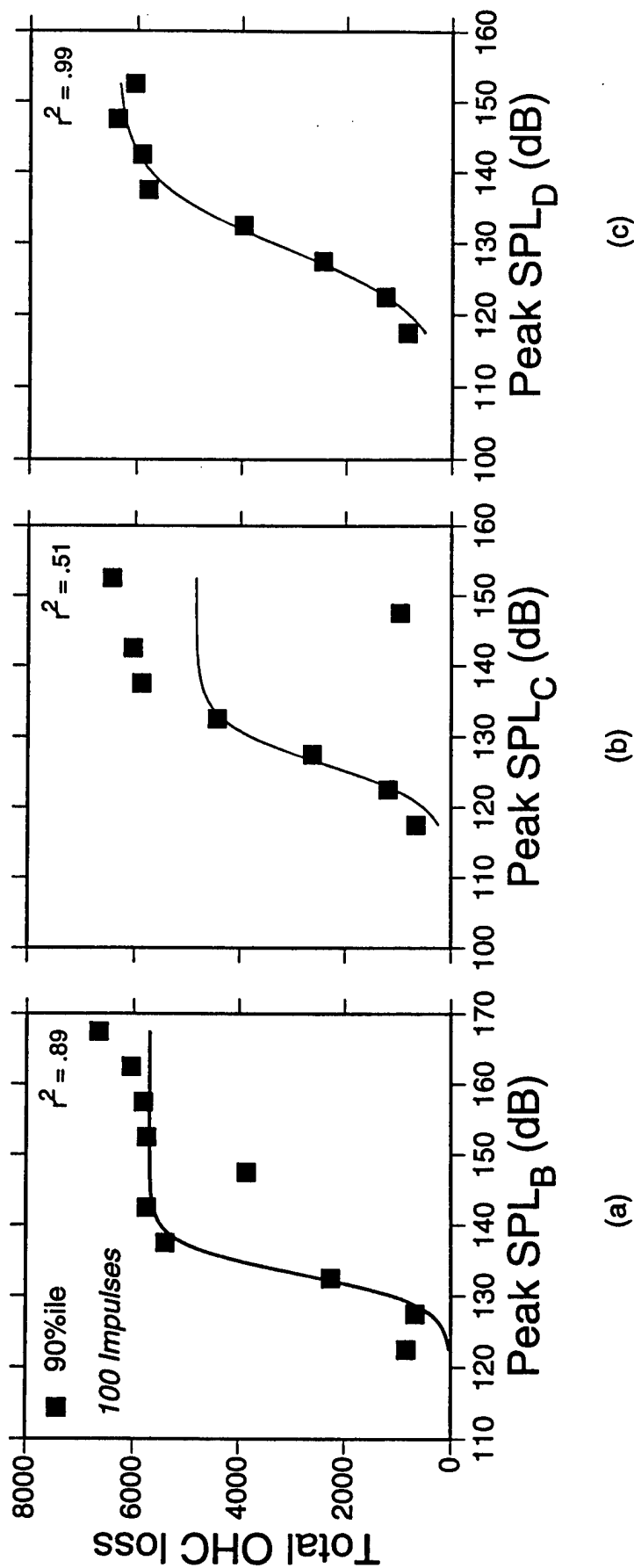
Figure 58 (g-i)   Total OHC loss in the cochlea of each animal exposed to 100 impulses (n=444) at the indicated level

of the hazard index (g) P_1-weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL.   The solid line

is the nonlinear regression fit of Equation (20) to the data.   The three parameters, A, B, and C of

Equation (20) corresponding to each regression line are listed in Table 15. (r^2 = coefficient of
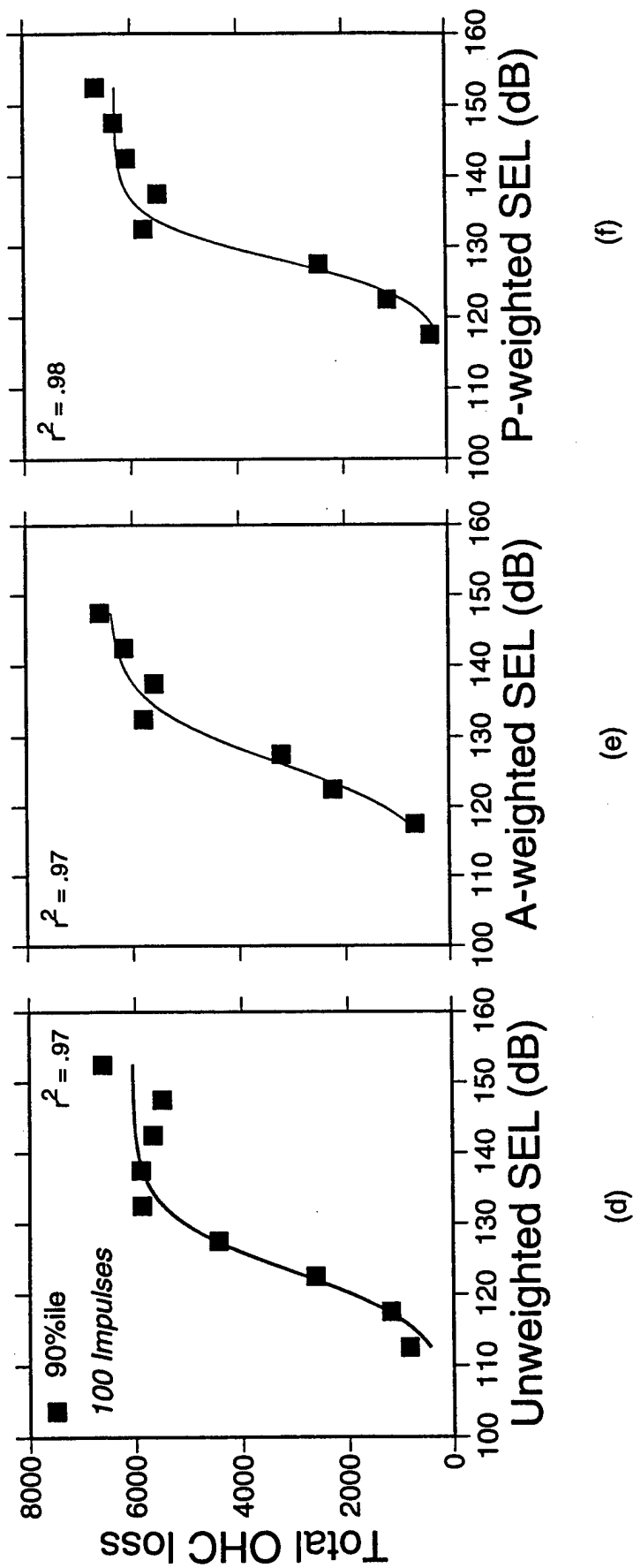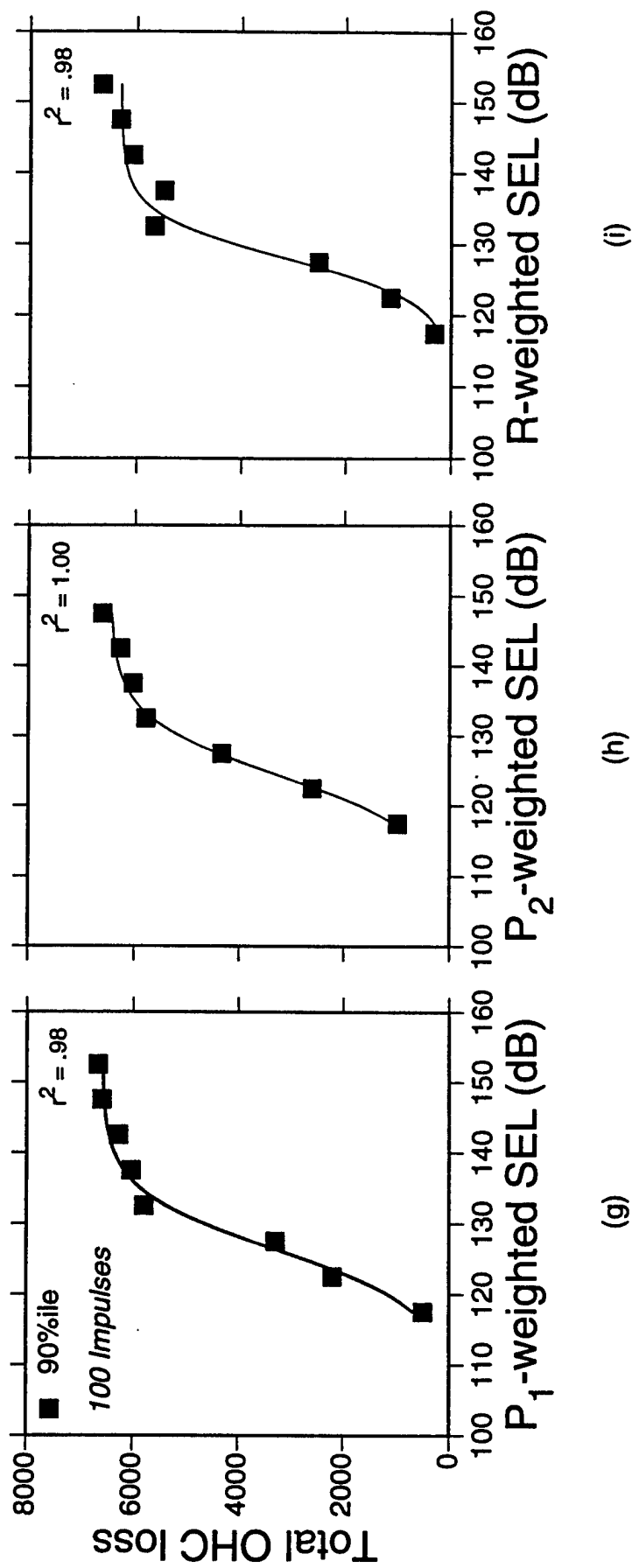
determination)

Figure 59 (a-c)   The 90th percentile total OHC loss for all animals exposed to 100 impulses falling within 5 dB bins of

the indicated level of the hazard index (a) Peak SPL_B, (b) Peak SPL_C, and (c) Peak SPL_D. The solid

line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of

Equation (20) corresponding to each regression line are listed in Table 15. (r^2 = coefficient of

determination)

Figure 59 (d-f)   The 90th percentile total OHC loss for all animals exposed to 100 impulses falling within 5 dB bins of the indicated level of the hazard index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 15. (r^2 = coefficient of determination)
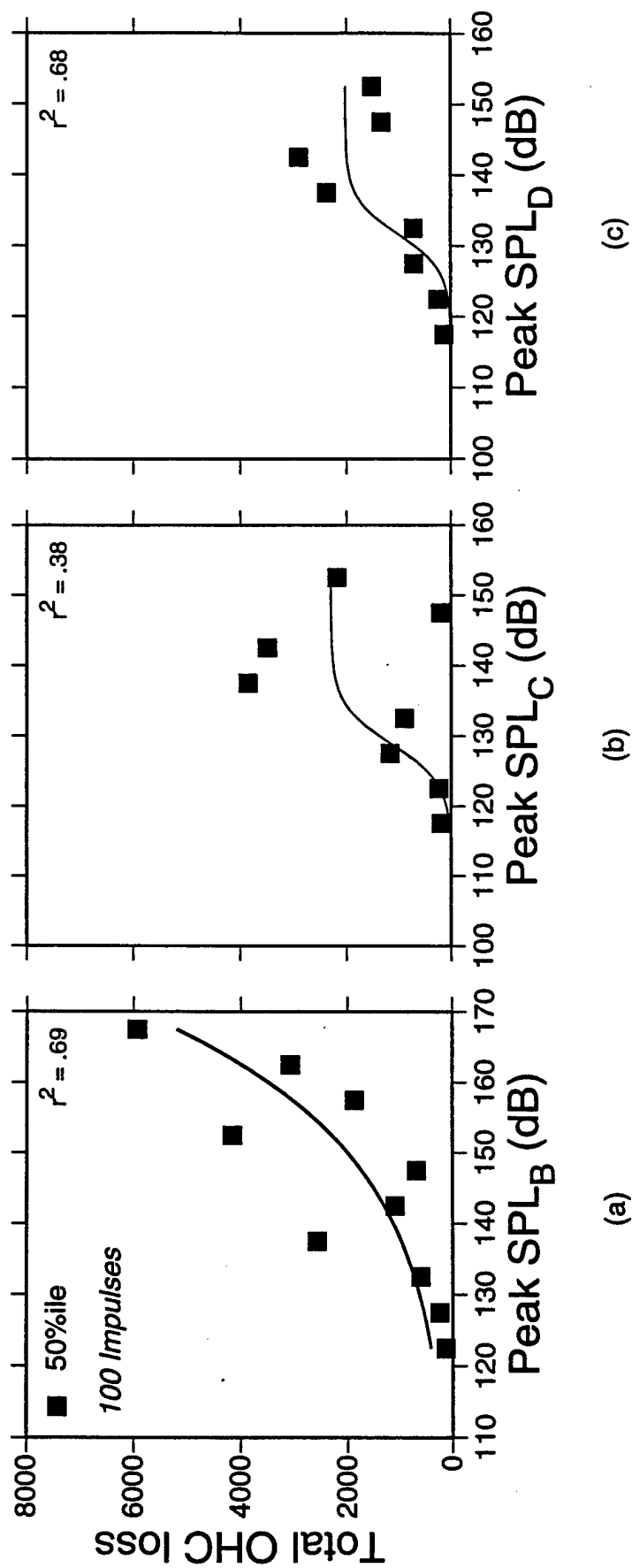
Figure 59 (g-i)   The 90th percentile total OHC loss for all animals exposed to 100 impulses falling within 5 dB bins of

the indicated level of the hazard index (g) P_1-weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted

SEL. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters,

A, B, and C of Equation (20) corresponding to each regression line are listed in Table 15. (r^2 =
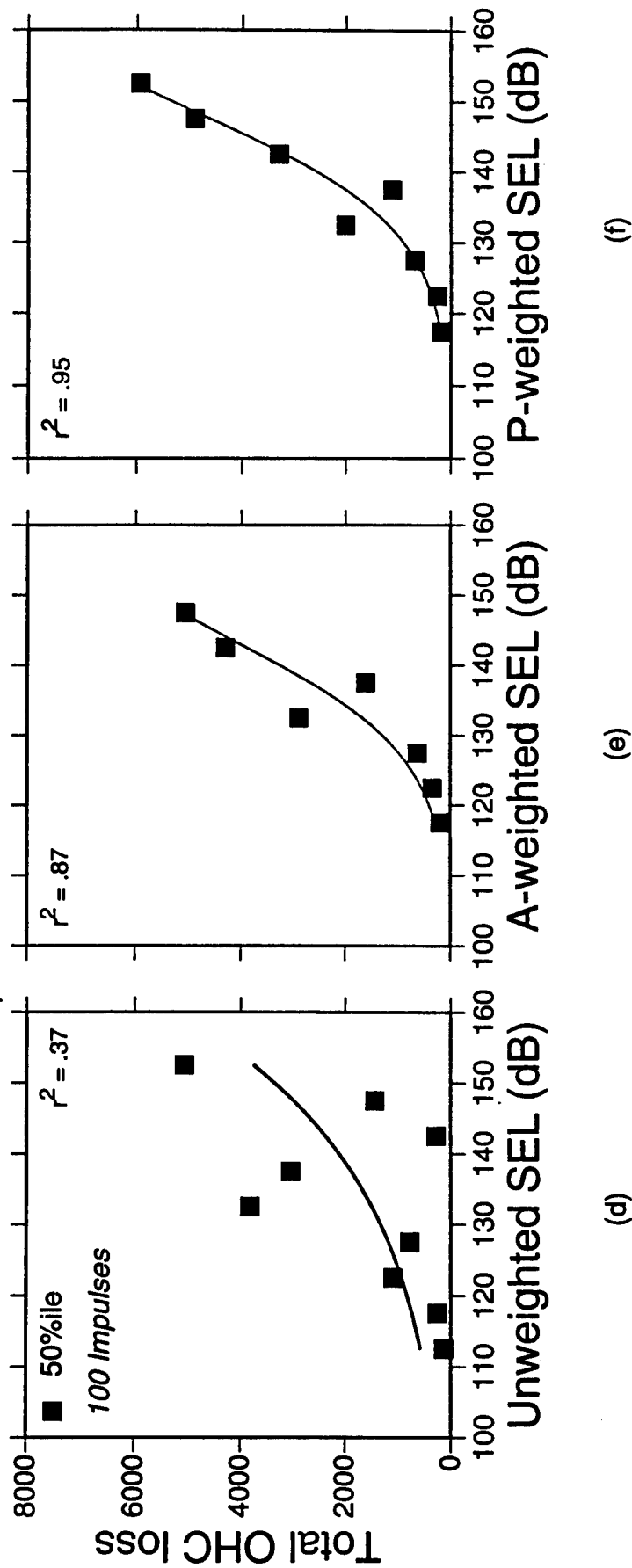
coefficient of determination)

Figure 60 (a-c)   The 50th percentile total OHC loss for all animals exposed to 100 impulses falling within 5 dB bins of

the indicated level of the hazard index (a) Peak SPL_B, (b) Peak SPL_C, and (c) Peak SPL_D.   The solid

line is the nonlinear regression fit of Equation (20) to the data.   The three parameters, A, B, and C of

Equation (20) corresponding to each regression line are listed in Table 15. (r^2 = coefficient of
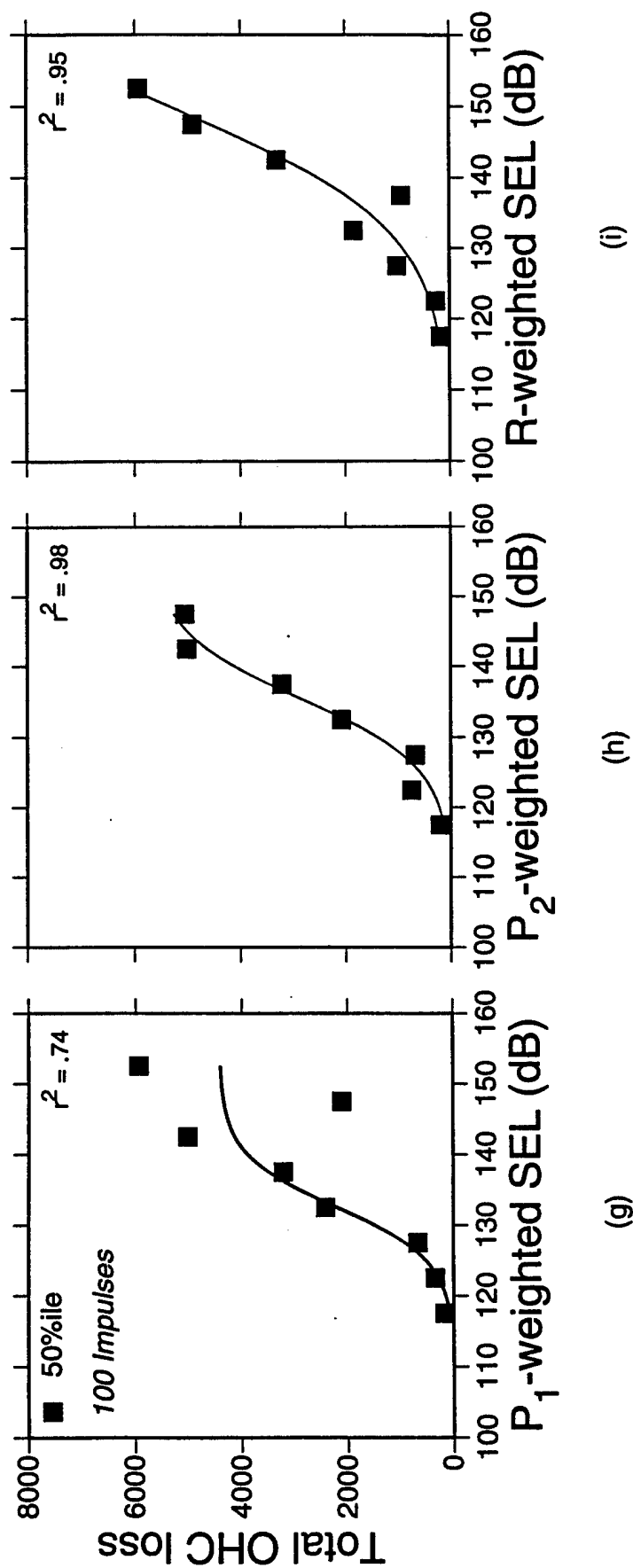
determination)

Figure 60 (d-f)   The 50th percentile total OHC loss for all animals exposed to 100 impulses falling within 5 dB bins of

the indicated level of the hazard index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted

SEL. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters,

A, B, and C of Equation (20) corresponding to each regression line are listed in Table 15. (r^2 =
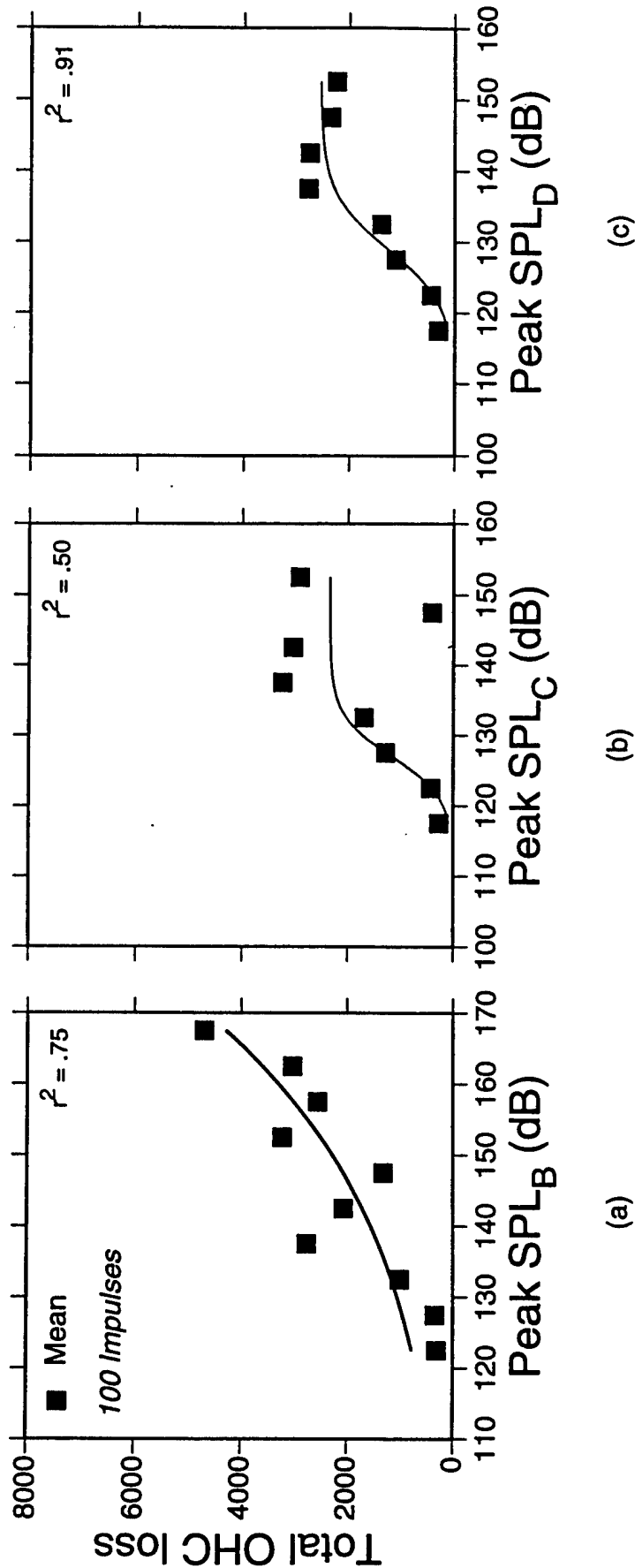
coefficient of determination)

Figure 60 (g-i) The 50th percentile total OHC loss for all animals exposed to 100 impulses falling within 5 dB bins of

the indicated level of the hazard index (g) P_1-weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted

SEL. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters,

A, B, and C of Equation (20) corresponding to each regression line are listed in Table 15. (r^2 =
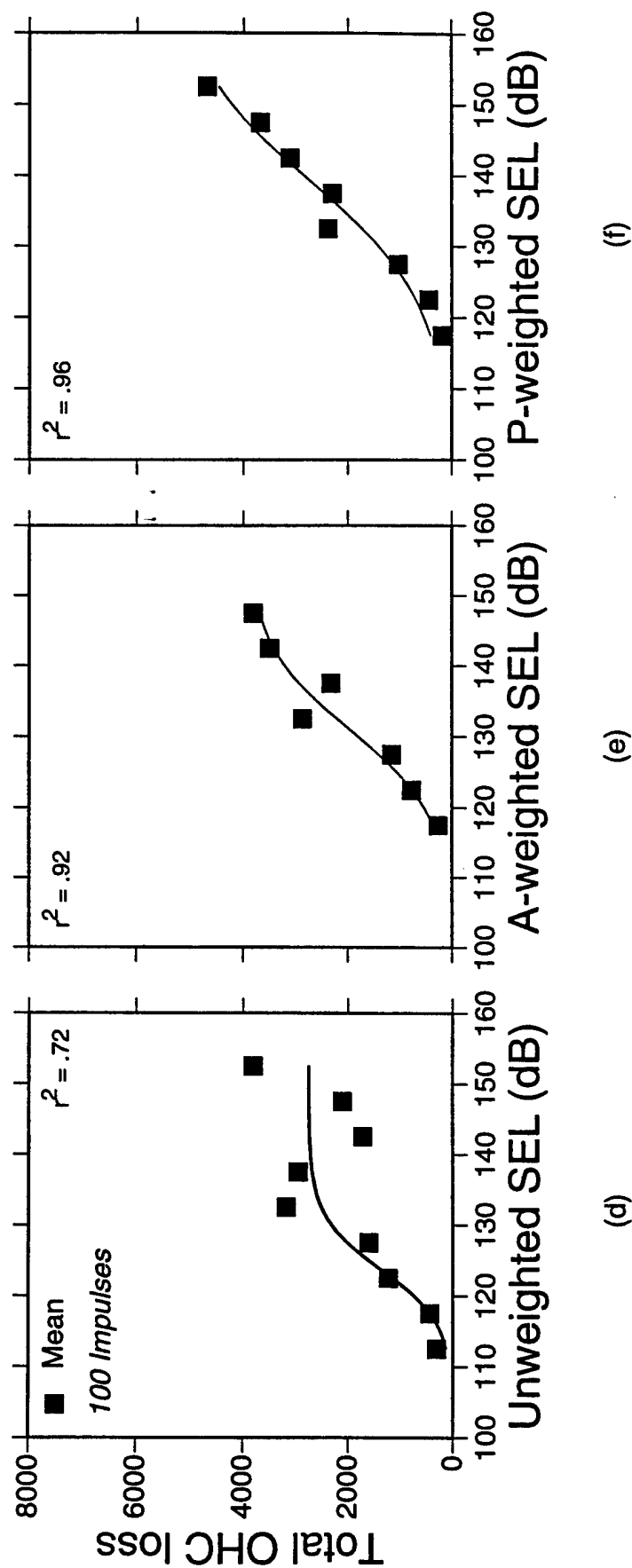
coefficient of determination)

Figure 61 (a-c)   The mean total OHC loss for all animals exposed to 100 impulses falling within 5 dB bins of the indicated level of the hazard index (a) Peak SPL$_B$, (b) Peak SPL$_C$, and (c) Peak SPL$_D$. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 15. (r^2 = coefficient of determination)
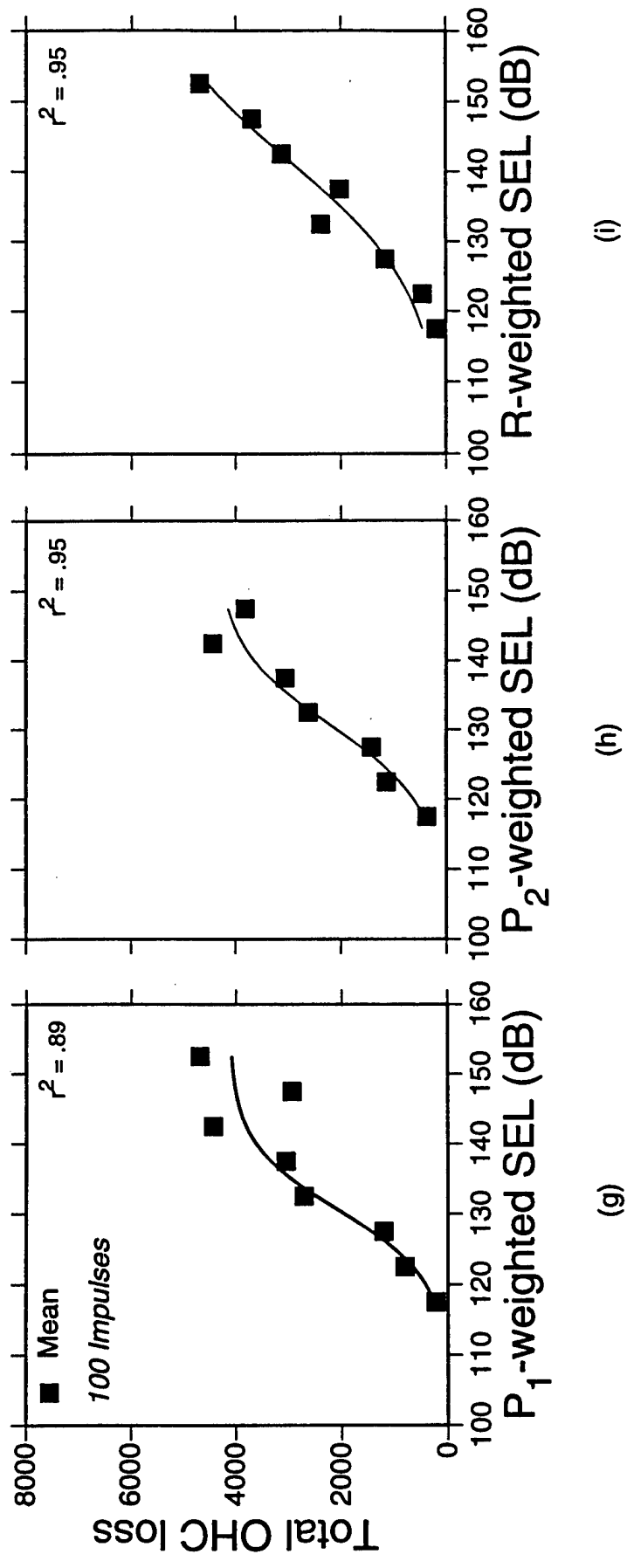
Figure 61 (d-f)   The mean total OHC loss for all animals exposed to 100 impulses falling within 5 dB bins of the

indicated level of the hazard index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL.

The solid line is the nonlinear regression fit of Equation (20) to the data.   The three parameters, A, B,

and C of Equation (20) corresponding to each regression line are listed in Table 15. (r^2 = coefficient of
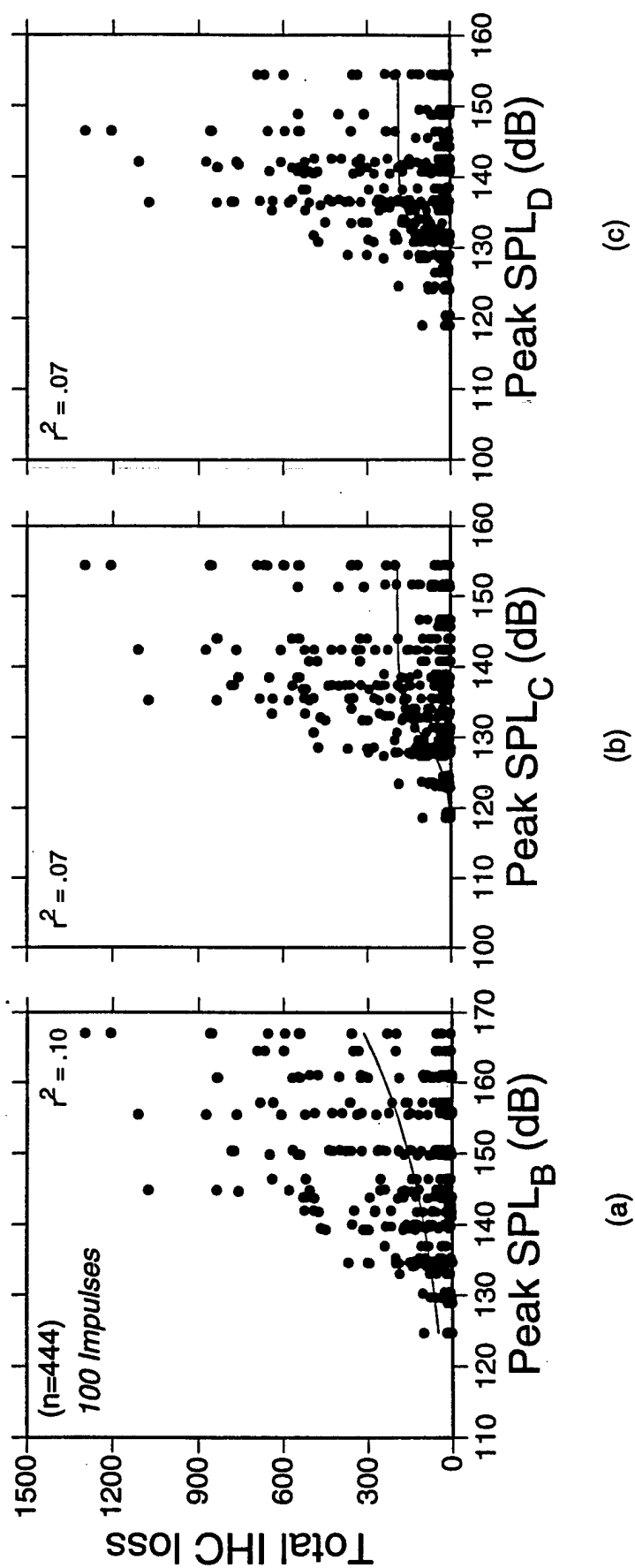
determination)

Figure 61 (g-i)   The mean total OHC loss for all animals exposed to 100 impulses falling within 5 dB bins of the

indicated level of the hazard index (g) P_1-weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL.

The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B,

and C of Equation (20) corresponding to each regression line are listed in Table 15. (r^2 = coefficient of
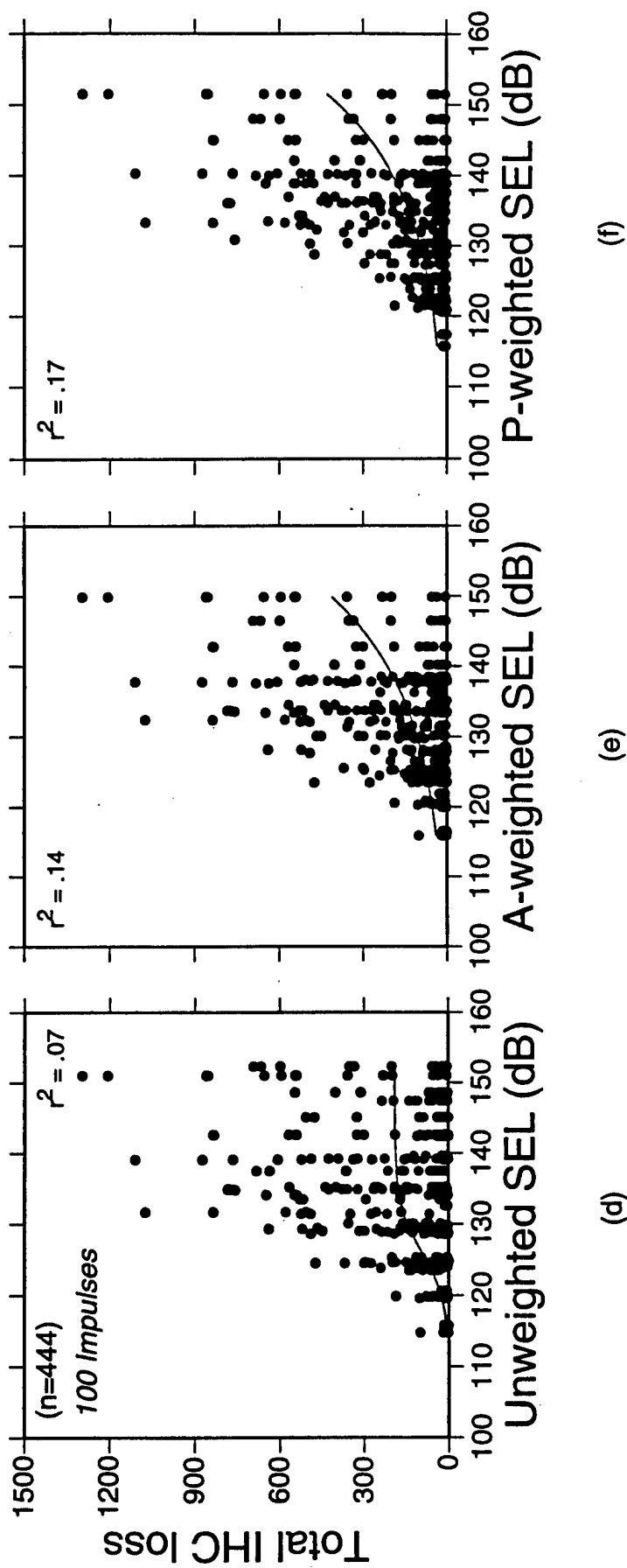
determination)

Figure 62 (a-c)   Total IHC loss in the cochlea of each animal exposed to 100 impulses (n=444) at the indicated level of

the hazard index (a) Peak SPL_B, (b) Peak SPL_C, and (c) Peak SPL_D.   The solid line is the nonlinear

regression fit of Equation (20) to the data.   The three parameters, A, B, and C of Equation (20)

corresponding to each regression line are listed in Table 16. (r^2 = coefficient of determination)
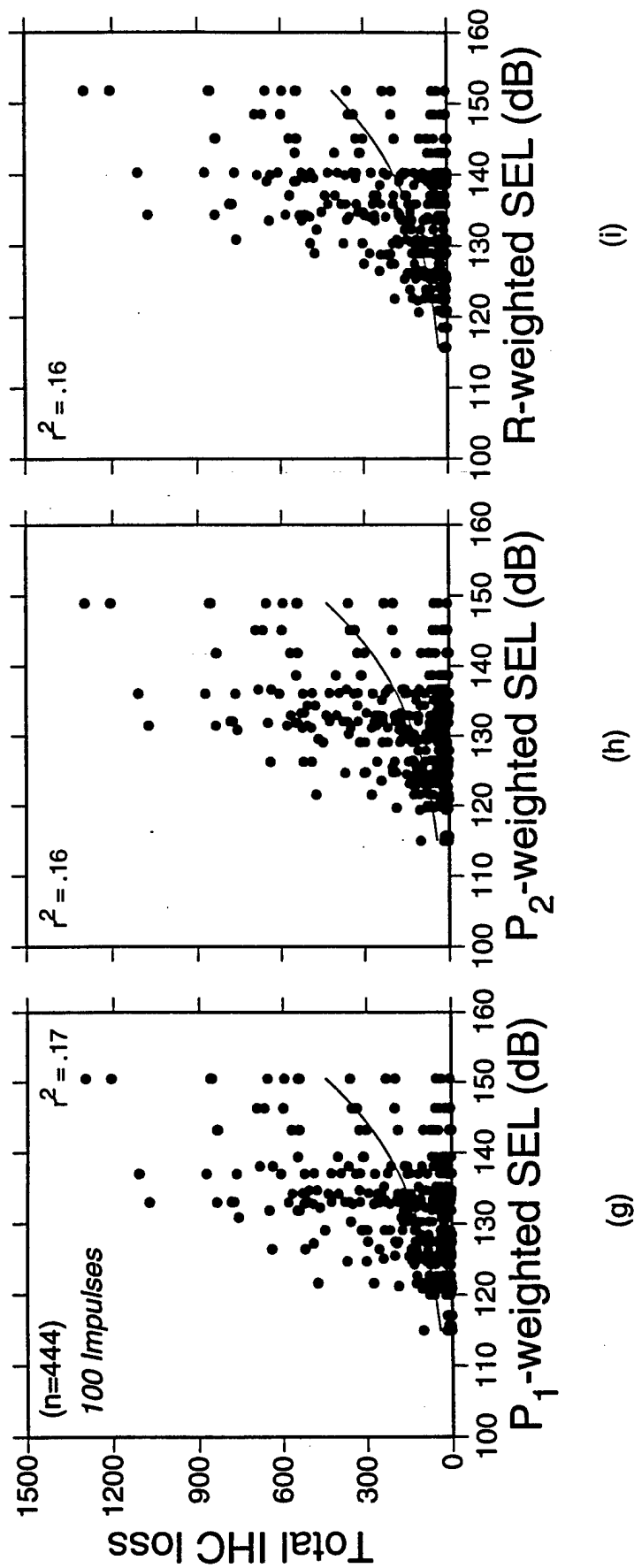
Figure 62 (d-f)   Total IHC loss in the cochlea of each animal exposed to 100 impulses (n=444) at the indicated level of

the hazard index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL. The solid line is

the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of

Equation (20) corresponding to each regression line are listed in Table 16. (r^2 = coefficient of
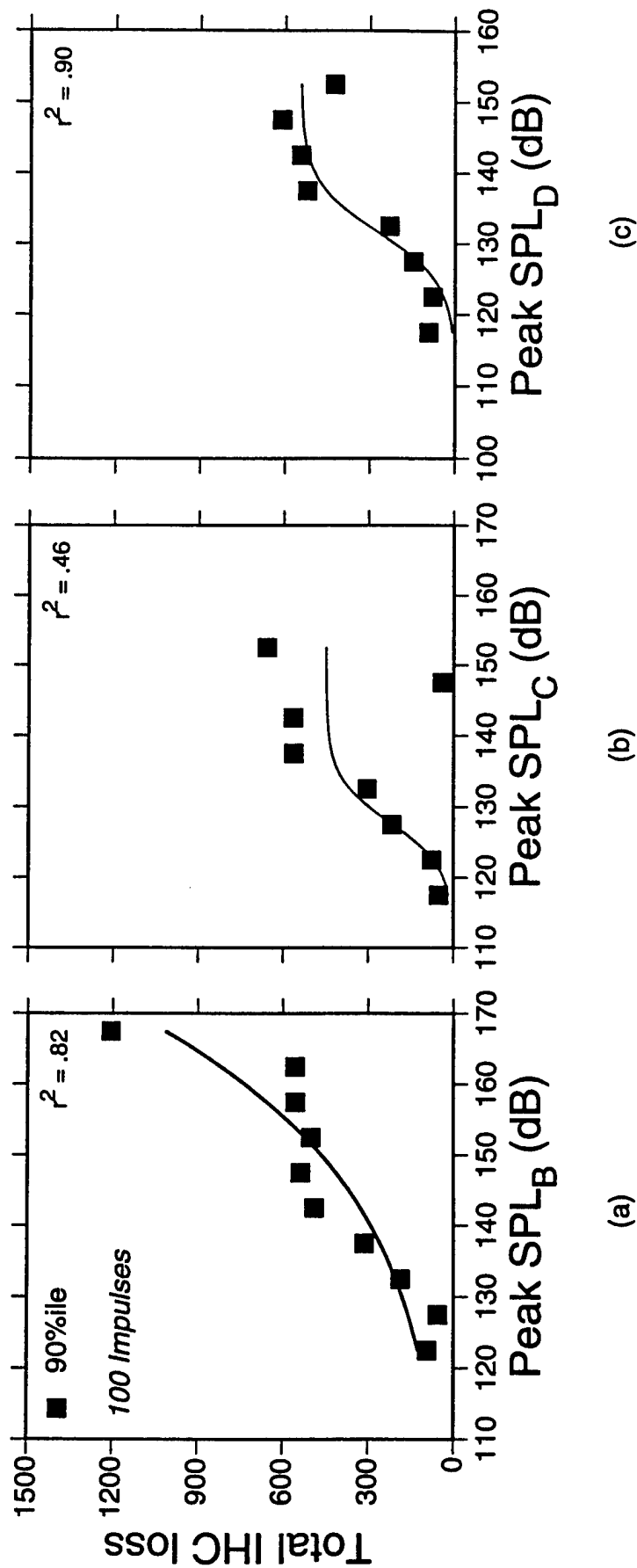
determination)

Figure 62 (g-i)   Total IHC loss in the cochlea of each animal exposed to 100 impulses (n=444) at the indicated level of

the hazard index (g) P_1-weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL. The solid line is

the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of

Equation (20) corresponding to each regression line are listed in Table 16. (r^2 = coefficient of
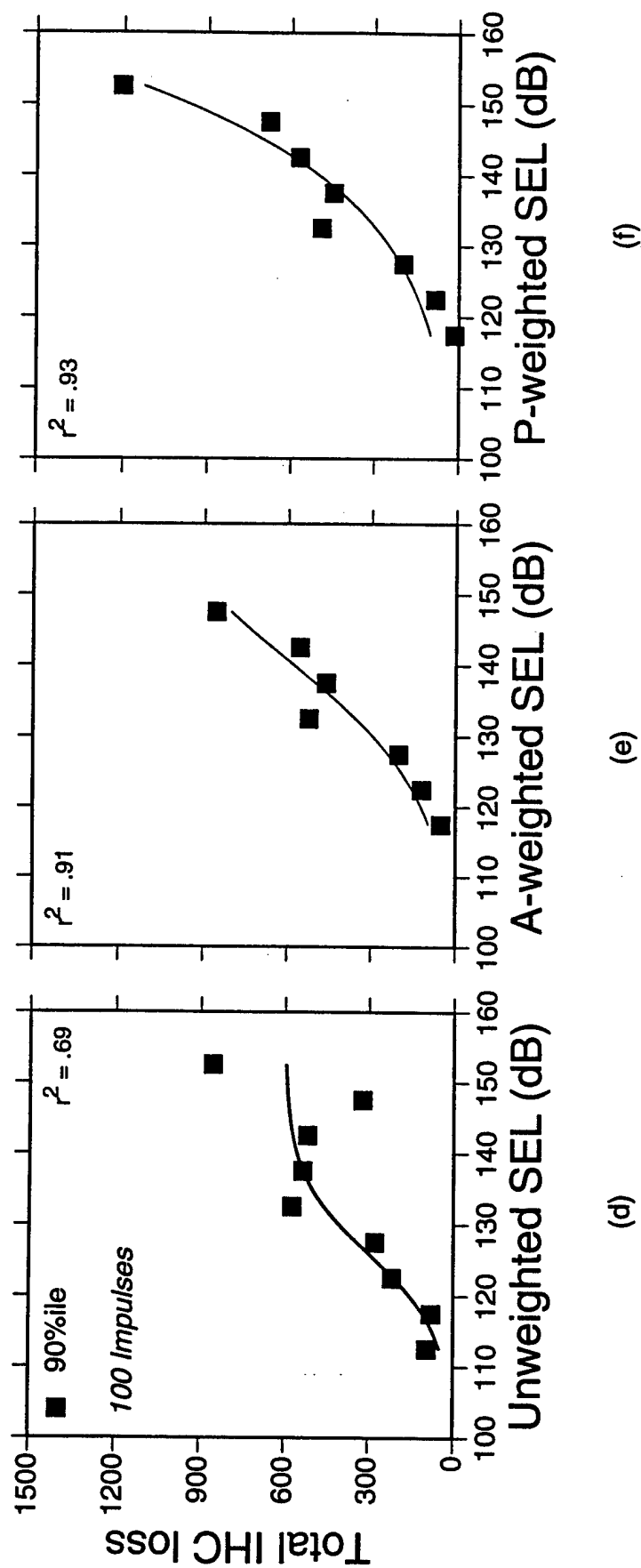
determination)

Figure 63 (a-c)   The 90th percentile total IHC loss for all animals exposed to 100 impulses falling within 5 dB bins of the indicated level of the hazard index (a) Peak SPL_B, (b) Peak SPL_C, and (c) Peak SPL_D. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 16. (r^2 = coefficient of determination)
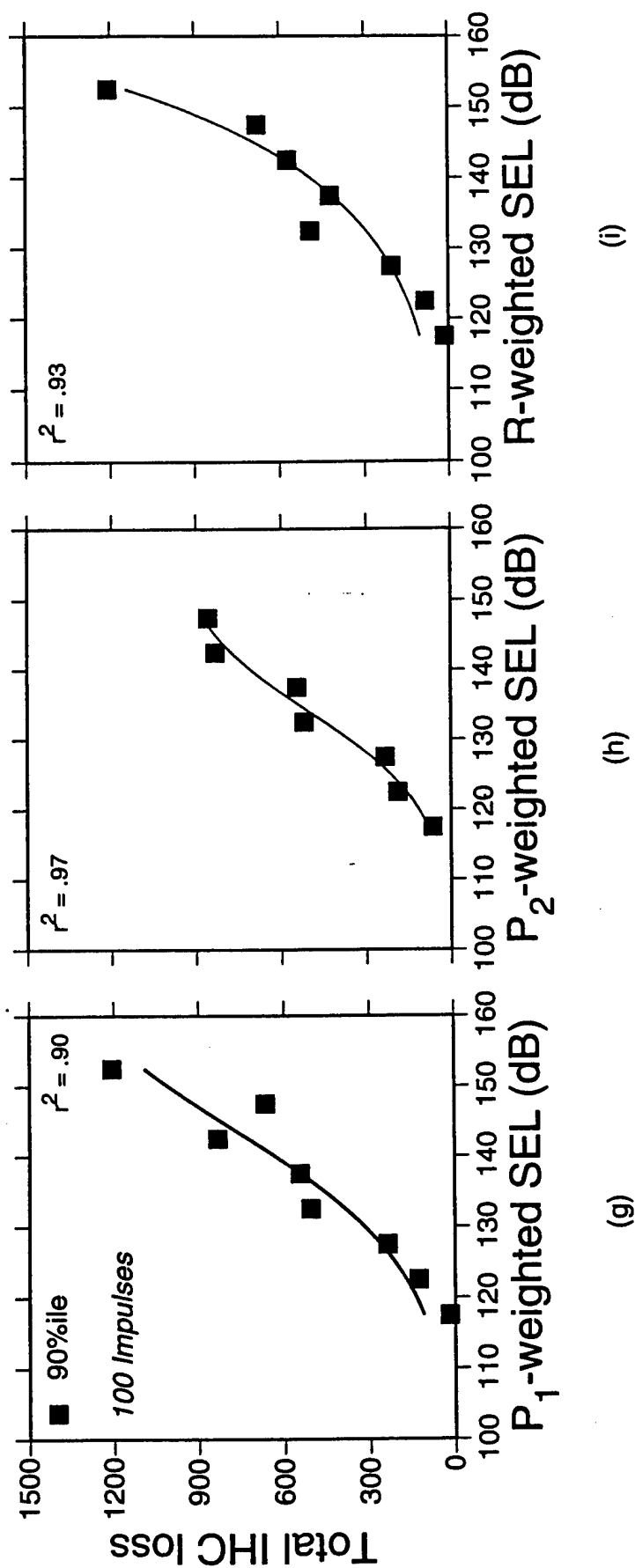
Figure 63 (d-f) The 90th percentile total IHC loss for all animals exposed to 100 impulses falling within 5 dB bins of the indicated level of the hazard index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL.

The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 16. (r^2 = coefficient of determination)
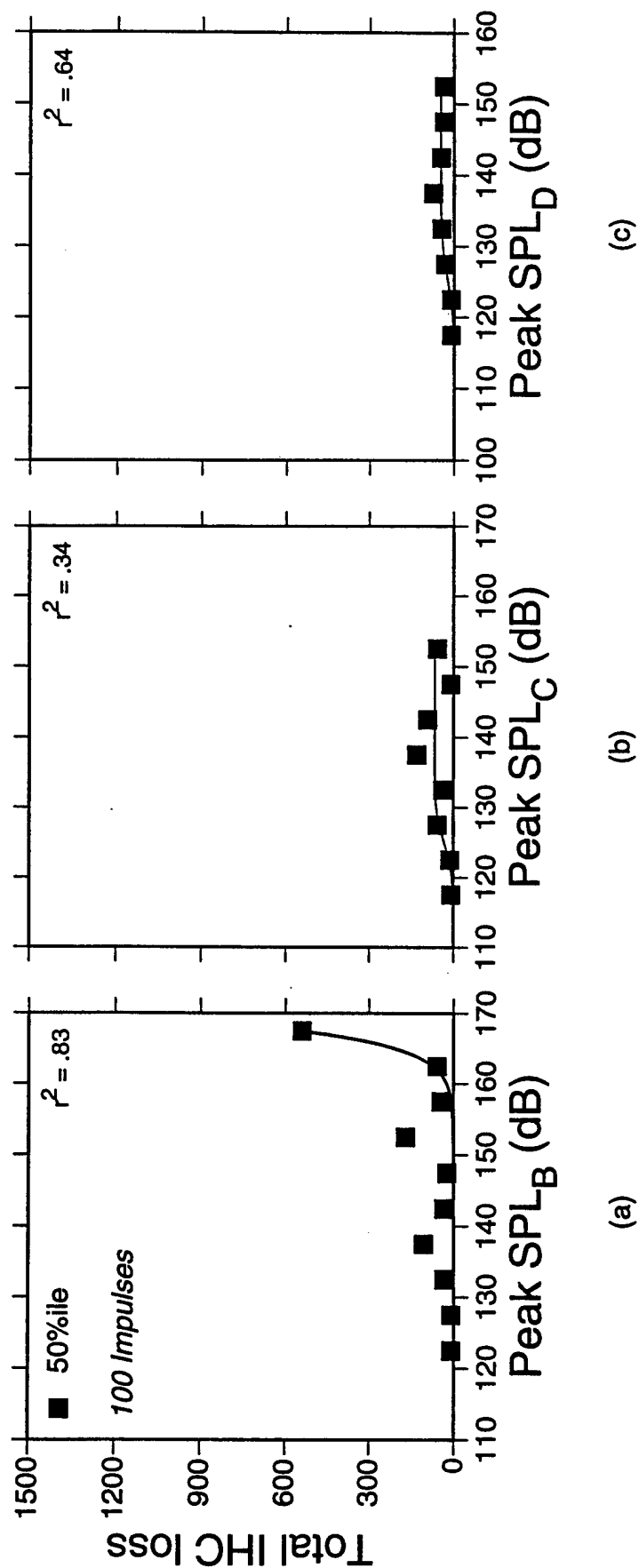
Figure 63 (g-i)   The 90th percentile total IHC loss for all animals exposed to 100 impulses falling within 5 dB bins of the indicated level of the hazard index (g) P_1-weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 16. (r^2 = coefficient of determination)
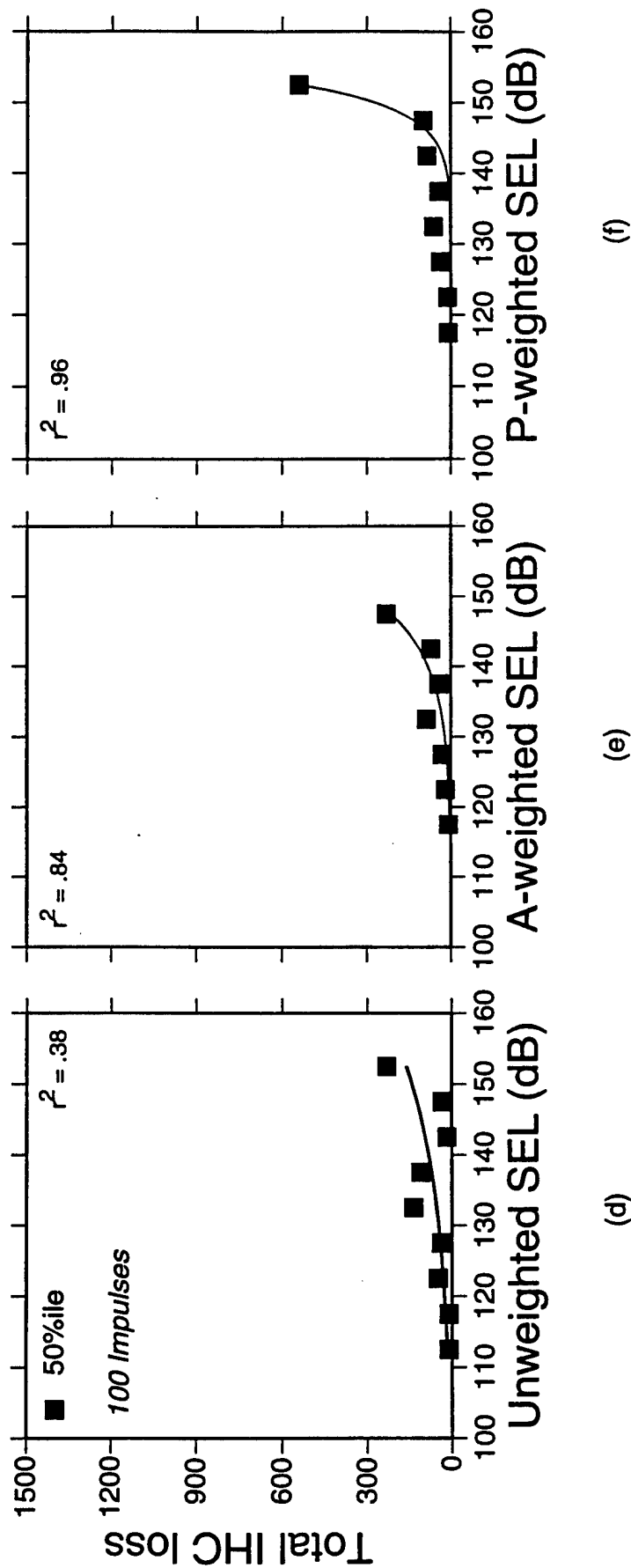
Figure 64 (a-c)   The 50th percentile total IHC loss for all animals exposed to 100 impulses falling within 5 dB bins of

the indicated level of the hazard index (a) Peak SPL_B, (b) Peak SPL_C, and (c) Peak SPL_D. The

solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B,

and C of Equation (20) corresponding to each regression line are listed in Table 16. (r^2 = coefficient
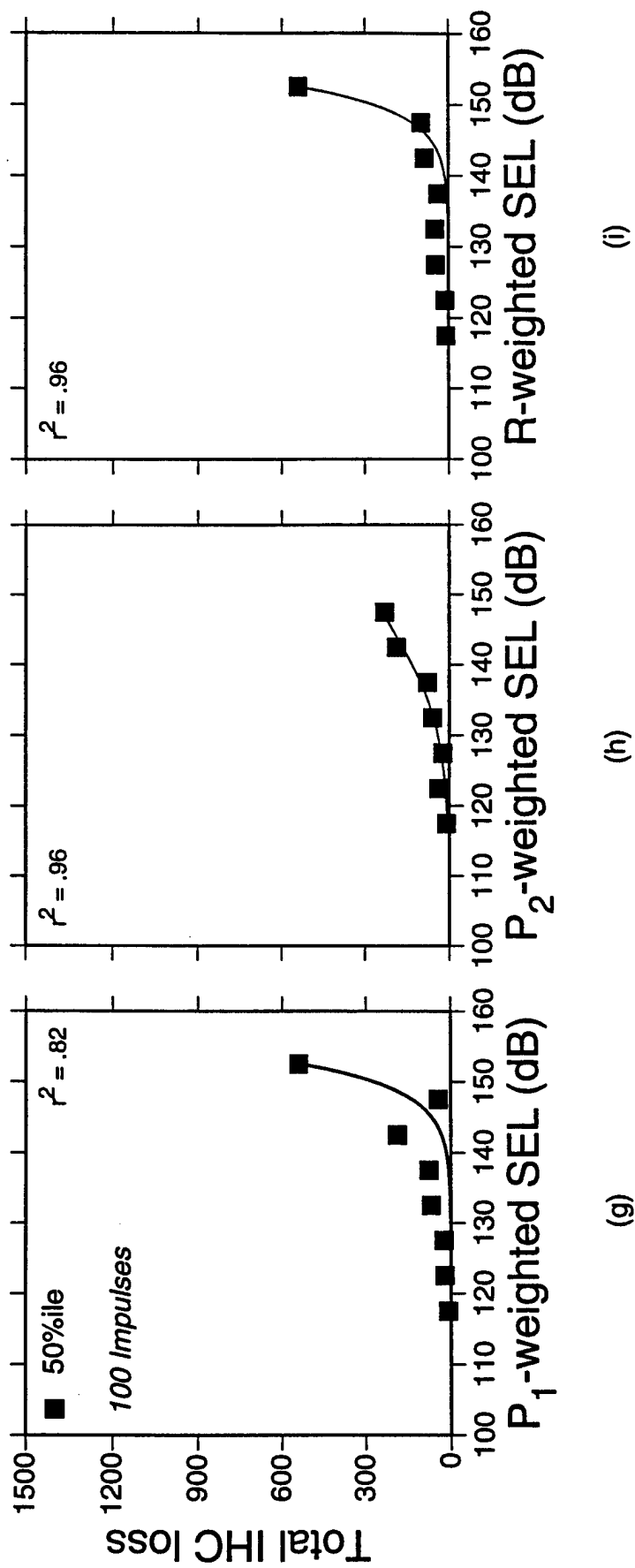
of determination)

Figure 64 (d-f) The 50th percentile total IHC loss for all animals exposed to 100 impulses falling within 5 dB bins of the indicated level of the hazard index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 16. (r^2 = coefficient of determination)
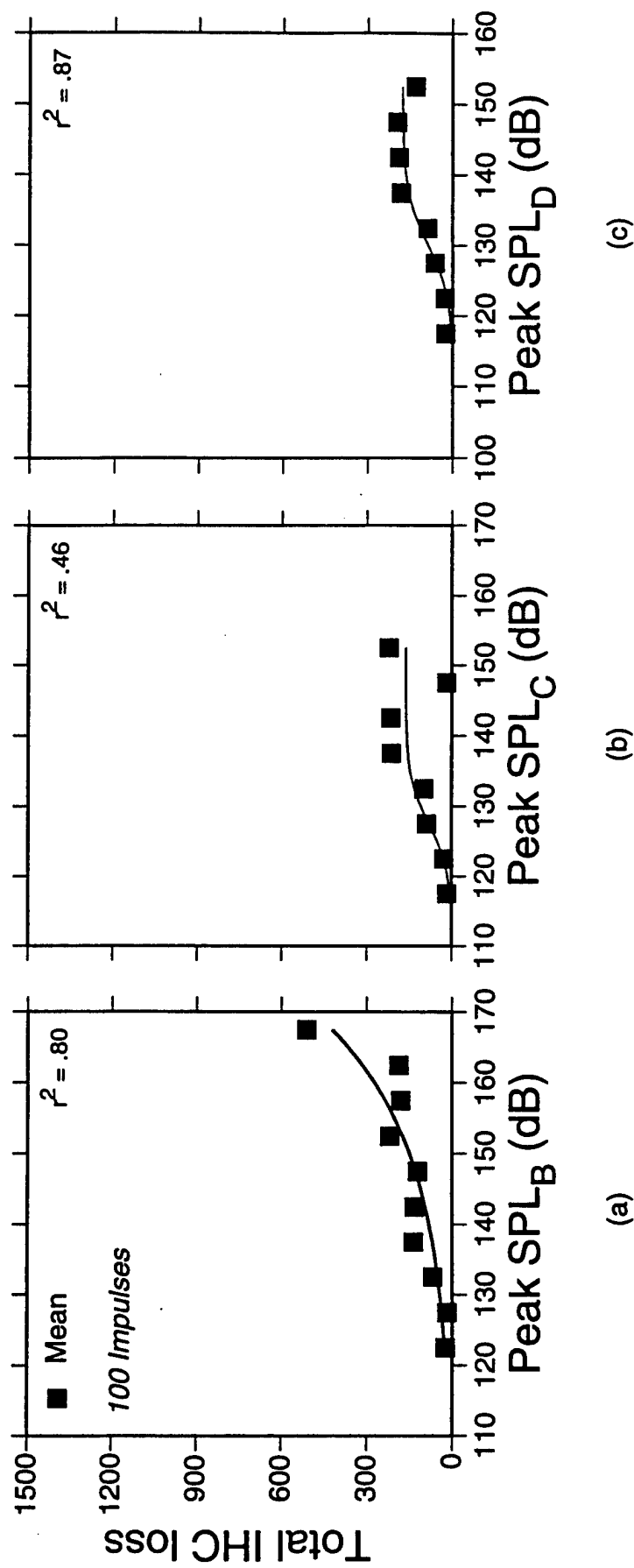
Figure 64 (g-i)   The 50th percentile total IHC loss for all animals exposed to 100 impulses falling within 5 dB bins of the indicated level of the hazard index (g) P_1-weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 16. (r^2 = coefficient of determination)
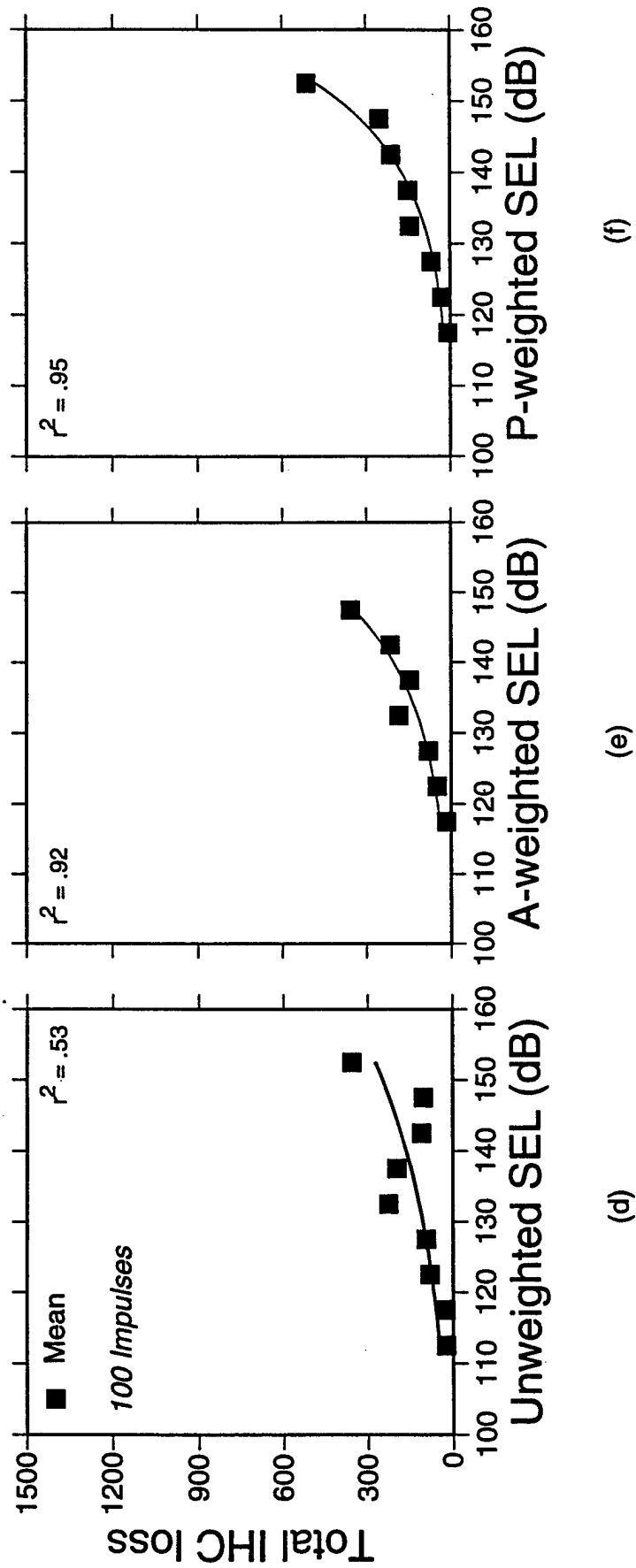
Figure 65 (a-c) The mean total IHC loss for all animals exposed to 100 impulses falling within 5 dB bins of the indicated level of the hazard index (a) Peak SPL$_B$, (b) Peak SPL$_C$, and (c) Peak SPL$_D$. The solid line is the nonlinear regression fit of Equation (20) to the data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 16. (r^2 = coefficient of determination)
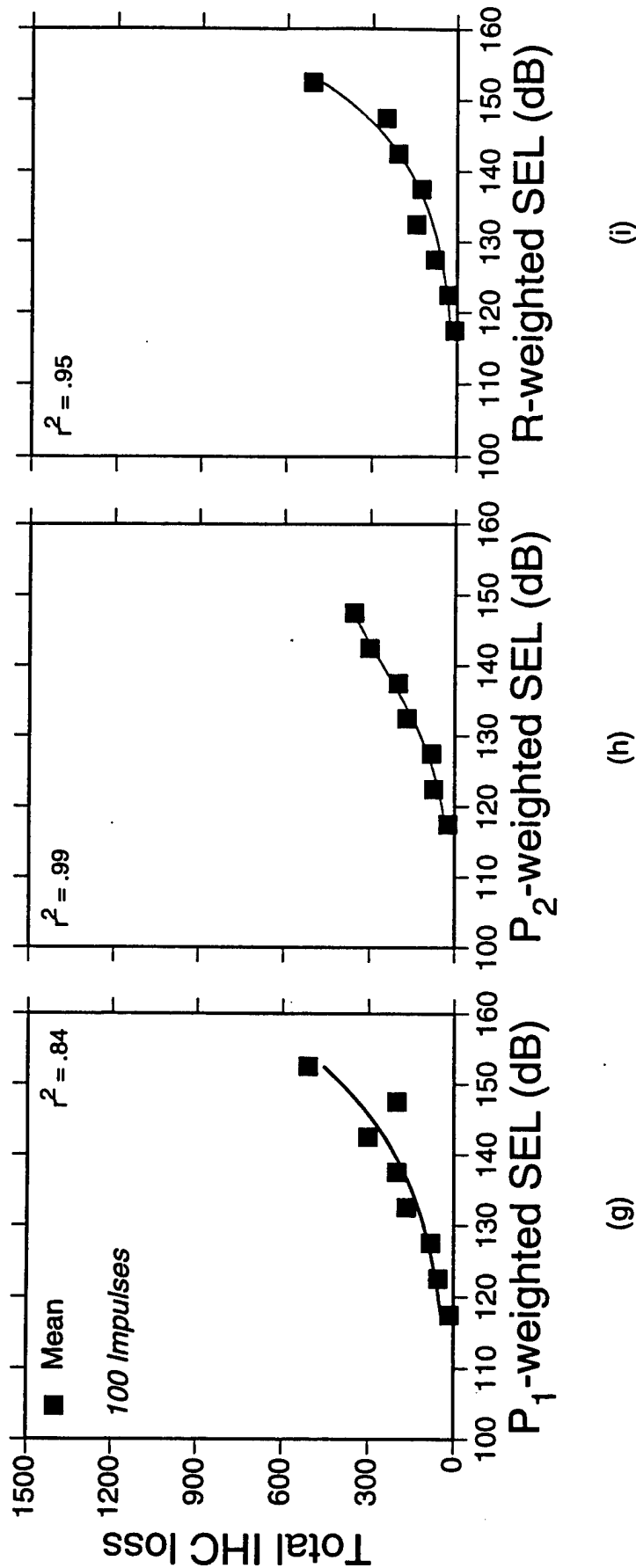
Figure 65 (d-f)   The mean total IHC loss for all animals exposed to 100 impulses falling within 5 dB bins of the

indicated level of the hazard index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL.

The solid line is the nonlinear regression fit of Equation (20) to the data.   The three parameters, A, B,

and C of Equation (20) corresponding to each regression line are listed in Table 16. (r^2 = coefficient of
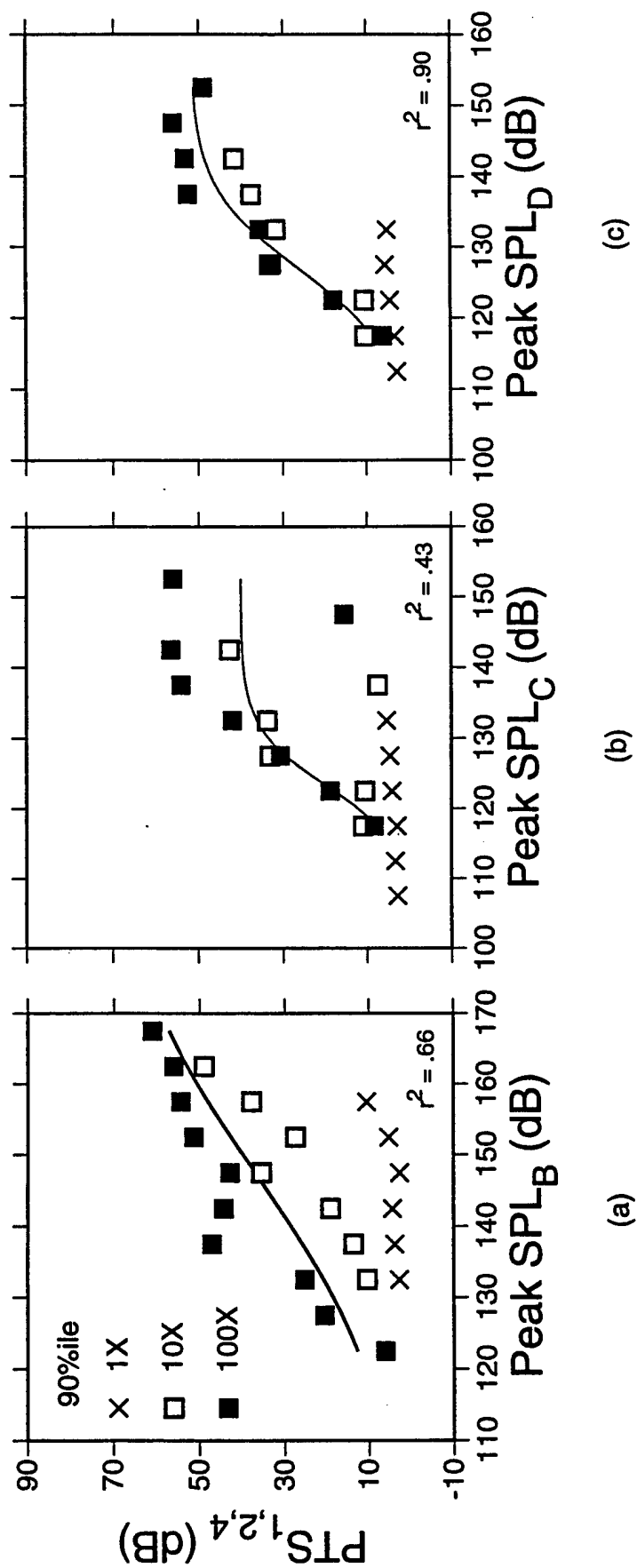
determination)

Figure 65 (g-i)   The mean total IHC loss for all animals exposed to 100 impulses falling within 5 dB bins of the

indicated level of the hazard index (g) P_1-weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL.

The solid line is the nonlinear regression fit of Equation (20) to the data.   The three parameters, A, B,

and C of Equation (20) corresponding to each regression line are listed in Table 16. (r^2 = coefficient of
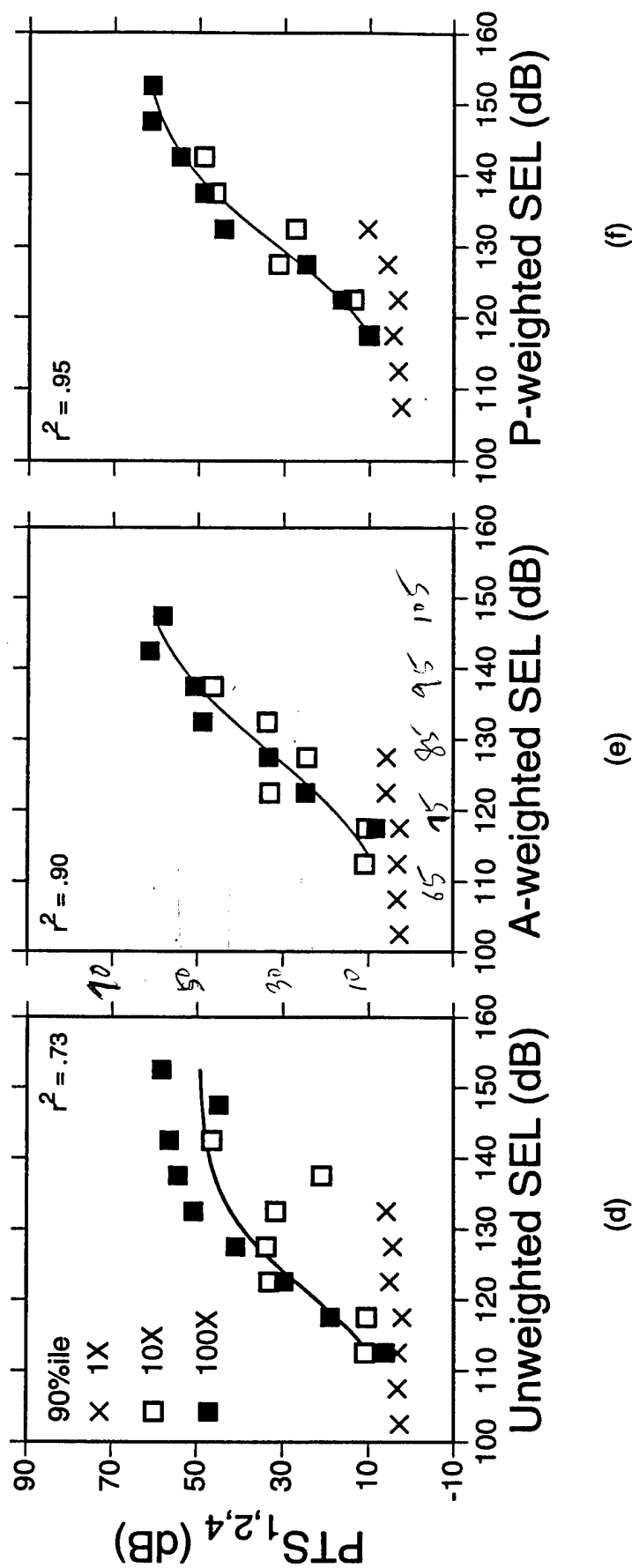
determination)

Figure 66 (a-c) The 90th percentile average PTS measured at the 1, 2, and 4 kHz test frequencies for all animals

exposed to 1, 10, or 100 impulses falling within 5 dB bins of the indicated level of the hazard index (a)

Peak SPL_B, (b) Peak SPL_C, and (c) Peak SPL_D. The solid line is the nonlinear regression fit of

Equation (20) to the 10X and 100X data. The three parameters, A, B, and C of Equation (20)

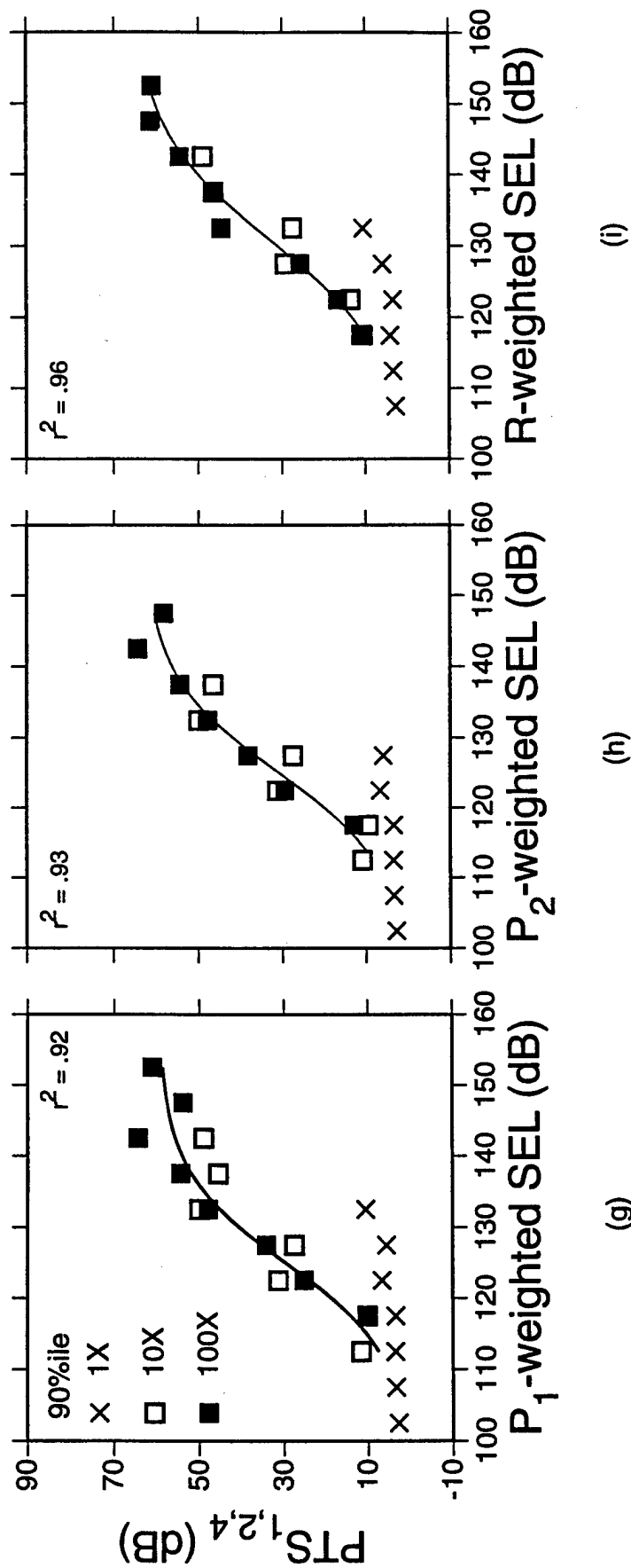corresponding to each regression line are listed in Table 17. (r^2 = coefficient of determination)

Figure 66 (d-f) The 90th percentile average PTS measured at the 1, 2, and 4 kHz test frequencies for all animals exposed to 1, 10, or 100 impulses falling within 5 dB bins of the indicated level of the hazard index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the 10X and 100X data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 17. (r^2 = coefficient of determination)
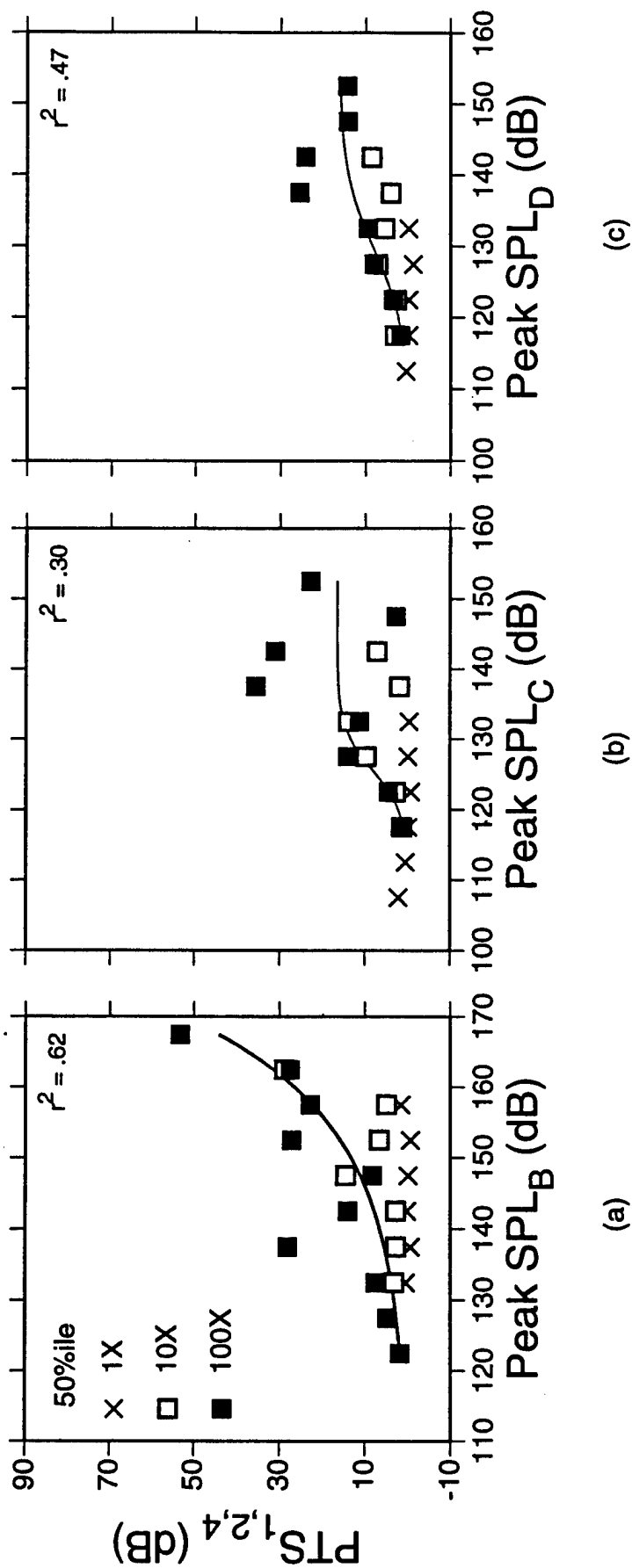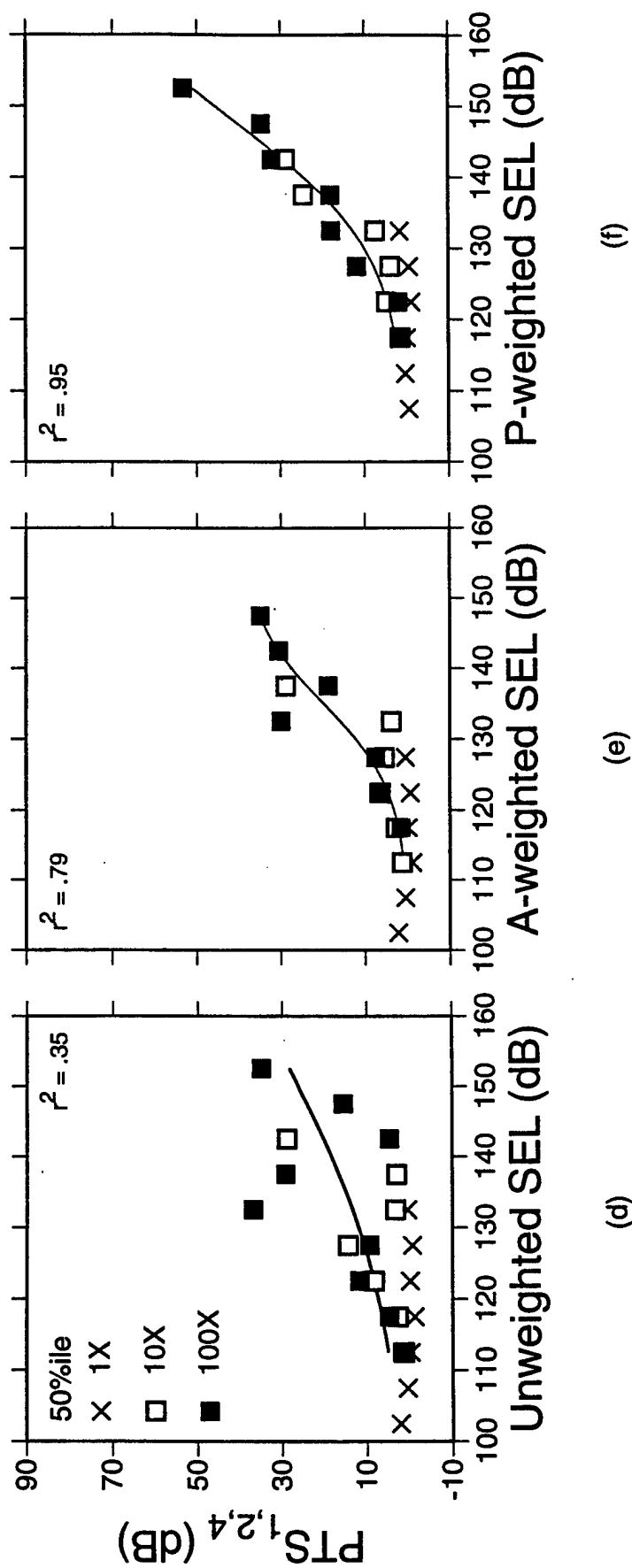
Figure 66 (g-i)   The 90th percentile average PTS measured at the 1, 2, and 4 kHz test frequencies for all animals exposed to 1, 10, or 100 impulses falling within 5 dB bins of the indicated level of the hazard index (g) P_1-weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the 10X and 100X data. The three parameters, A, B, and C of Equation (20) are listed in Table 17. (r^2 = coefficient of determination) corresponding to each regression line are listed in Table 17.

Figure 67 (a-c)   The 50th percentile average PTS measured at the 1, 2, and 4 kHz test frequencies for all animals

exposed to 1, 10, or 100 impulses falling within 5 dB bins of the indicated level of the hazard index (a)

Peak SPL_B, (b) Peak SPL_C, and (c) Peak SPL_D.   The solid line is the nonlinear regression fit of

Equation (20) to the 10X and 100X data.   The three parameters, A, B, and C of Equation (20)

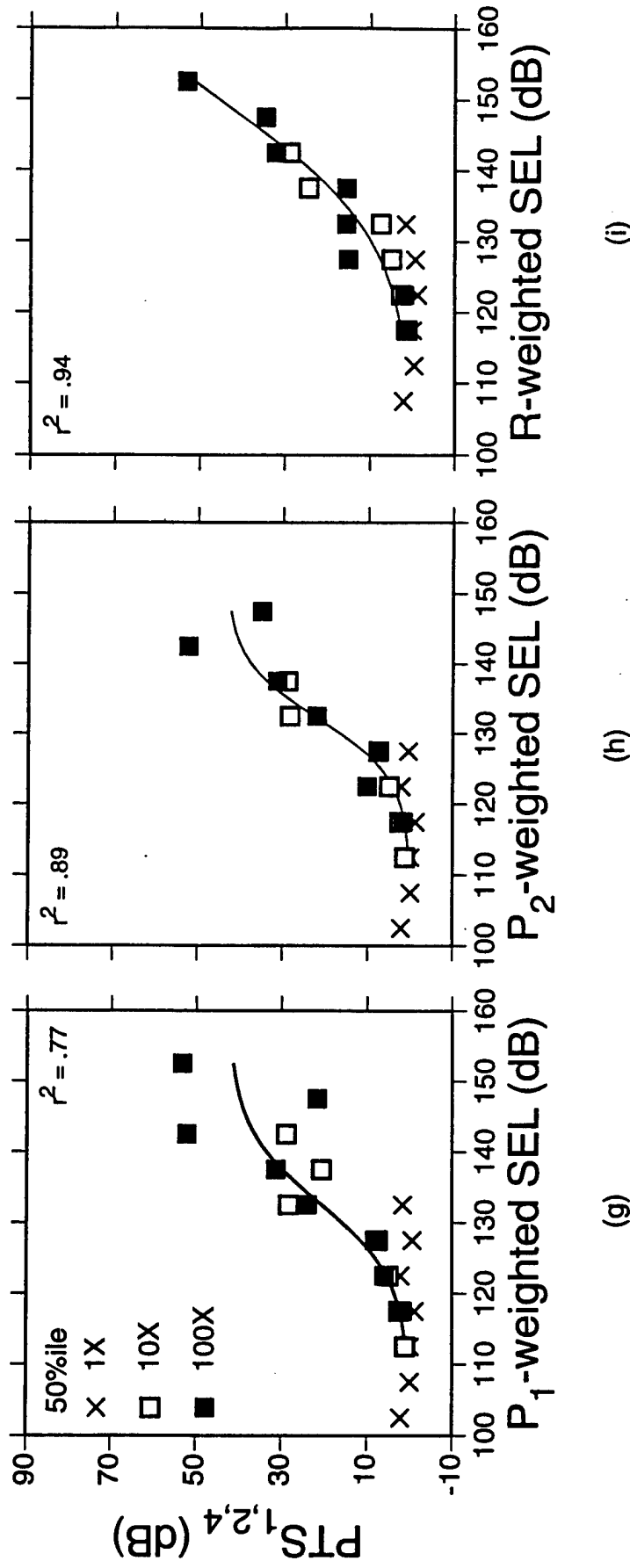corresponding to each regression line are listed in Table 17. (r^2 = coefficient of determination)

Figure 67 (d-f)   The 50th percentile average PTS measured at the 1, 2, and 4 kHz test frequencies for all animals exposed

to 1, 10, or 100 impulses falling within 5 dB bins of the indicated level of the hazard index (d) Unweighted

SEL, (e) A-weighted SEL, and (f) P-weighted SEL.   The solid line is the nonlinear regression fit of

Equation (20) to the 10X and 100X data.   The three parameters, A, B, and C of Equation (20)

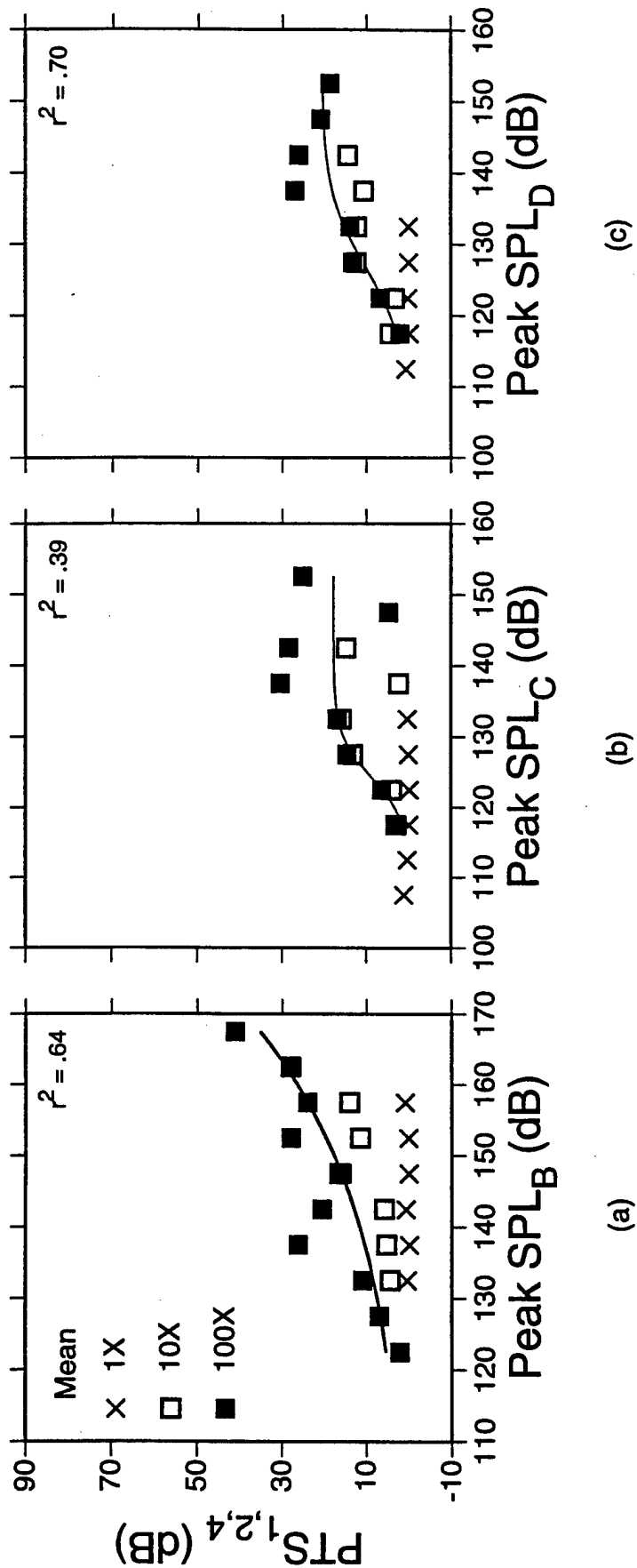corresponding to each regression line are listed in Table 17. (r^2 = coefficient of determination)

Figure 67 (g-i)   The 50th percentile average PTS measured at the 1, 2, and 4 kHz test frequencies for all animals exposed

to 1, 10, or 100 impulses falling within 5 dB bins of the indicated level of the hazard index (g) P_1-weighted

SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL.   The solid line is the nonlinear regression fit of

Equation (20) to the 10X and 100X data.   The three parameters, A, B, and C of Equation (20)

corresponding to each regression line are listed in Table 17. (r^2 = coefficient of determination)
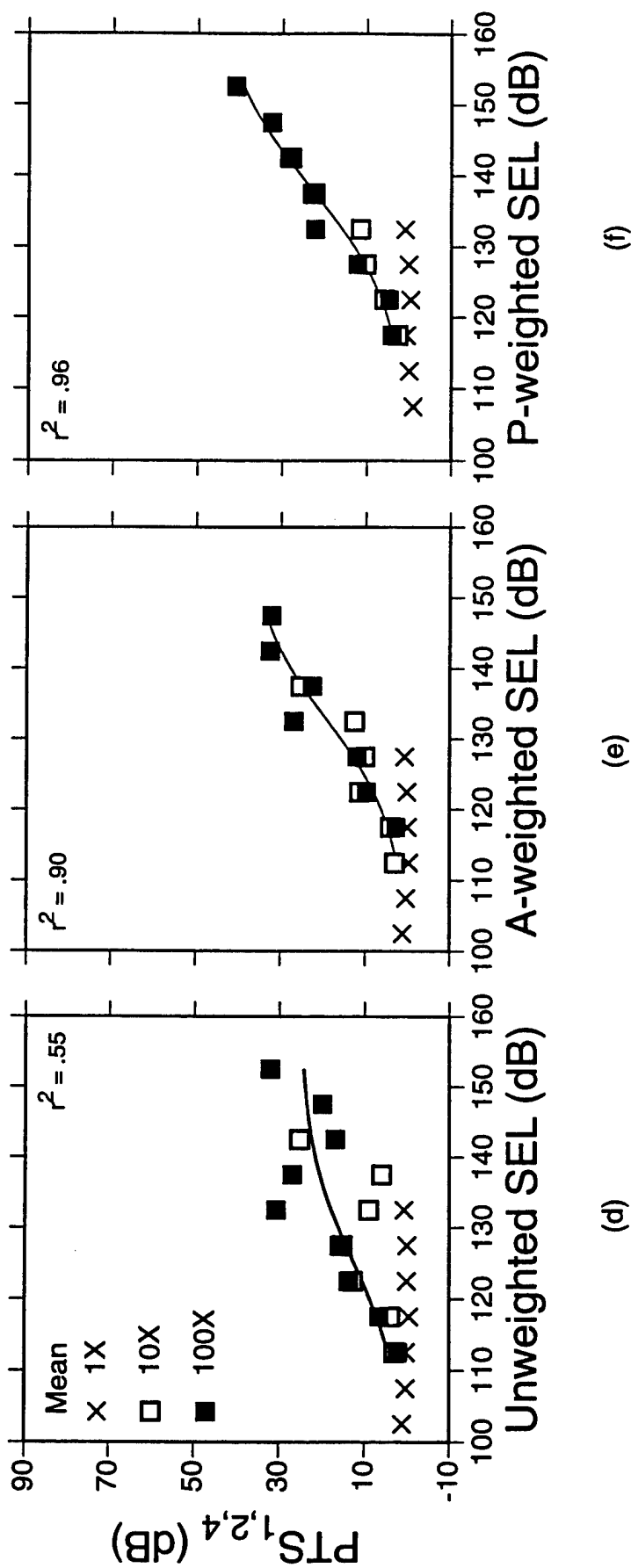
Figure 68 (a-c)   The mean average PTS measured at the 1, 2, and 4 kHz test frequencies for all animals exposed to 1, 10, or 100 impulses falling within 5 dB bins of the indicated level of the hazard index (a) Peak SPL_B, (b) Peak SPL_C, and (c) Peak SPL_D. The solid line is the nonlinear regression fit of Equation (20) to the 10X and 100X data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 17. (r^2 = coefficient of determination)
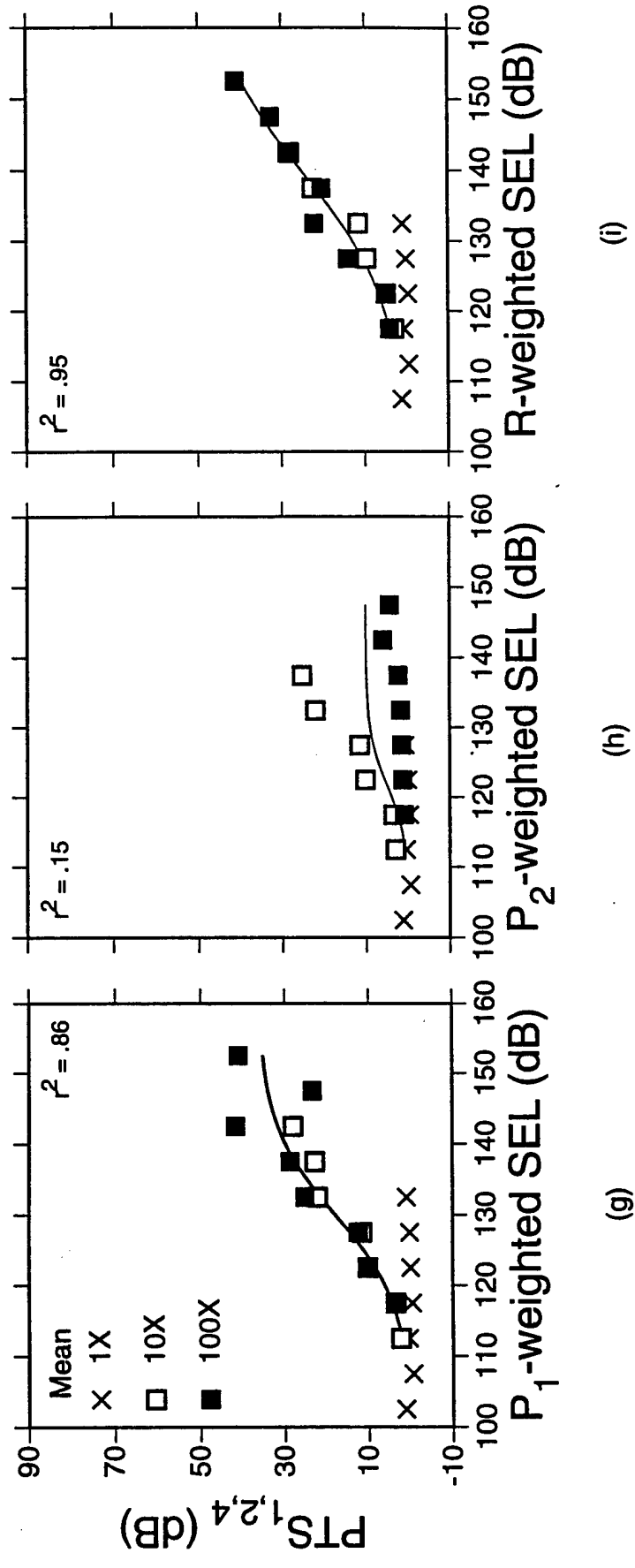
Figure 68 (d-f) The mean average PTS measured at the 1, 2, and 4 kHz test frequencies for all animals exposed to 1, 10,

or 100 impulses falling within 5 dB bins of the indicated level of the hazard index (d) Unweighted SEL, (e)

A-weighted SEL, and (f) P-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to

the 10X and 100X data. The three parameters, A, B, and C of Equation (20) corresponding to each

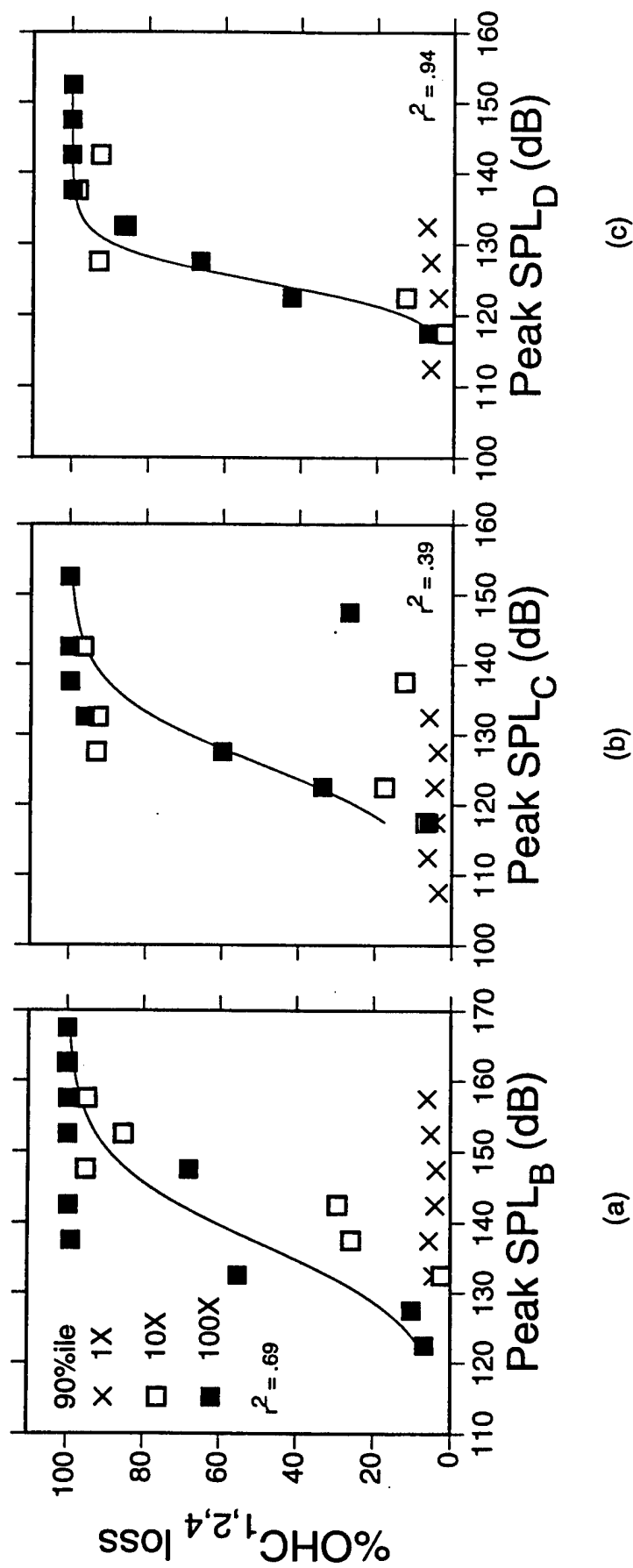regression line are listed in Table 17. (r^2 = coefficient of determination)

Figure 68 (g-i)   The mean average PTS measured at the 1, 2, and 4 kHz test frequencies for all animals exposed to 1, 10, or 100 impulses falling within 5 dB bins of the indicated level of the hazard index (g) P_1-weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to P_2-weighted SEL. The three parameters, A, B, and C of Equation (20) corresponding to each the 10X and 100X data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 17. (r^2 = coefficient of determination)
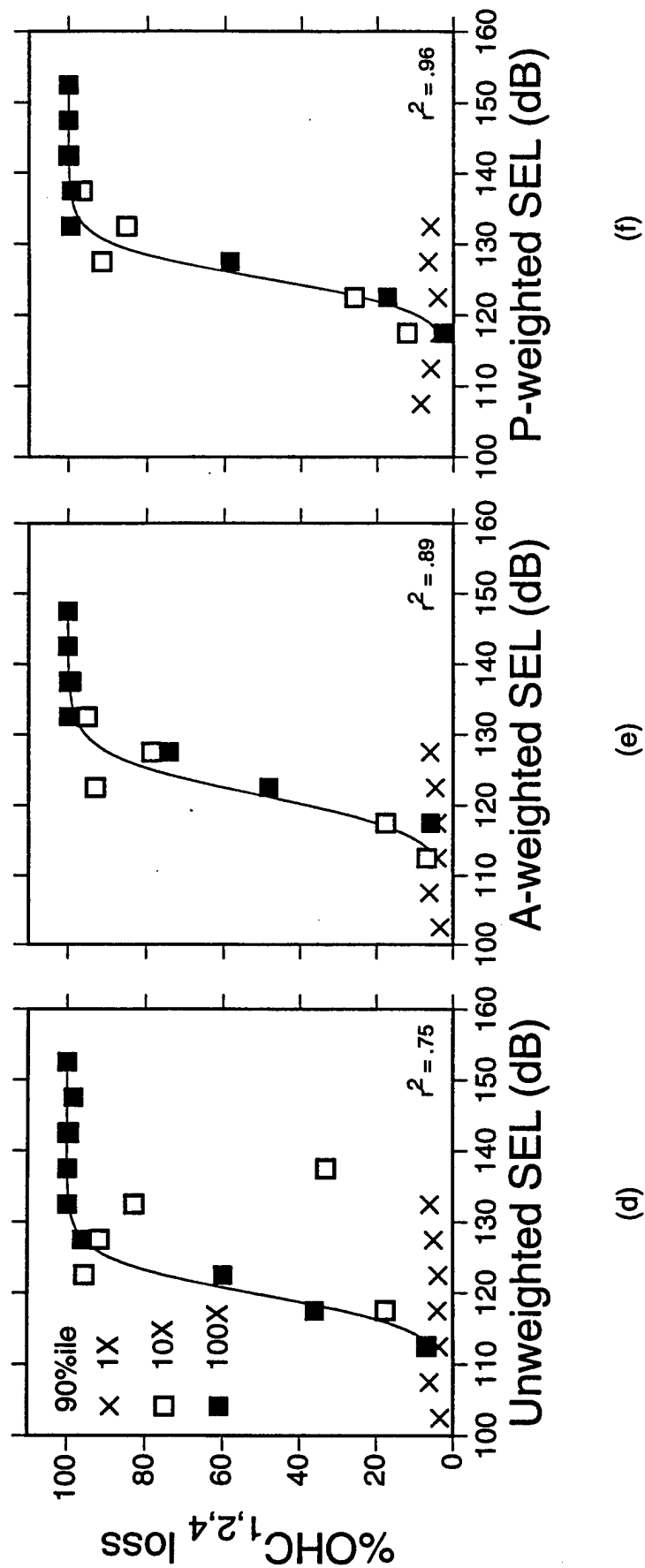
Figure 69 (a-c) The 90th percentile of percent OHC loss in the cochlea over octave-band lengths of the basilar membrane centered at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for all animals exposed to 1, 10, or 100 impulses falling within 5 dB bins of the indicated level of the hazard index (a) Peak SPL_B, (b) Peak SPL_C, and (c) Peak SPL_D. The solid line is the nonlinear regression fit of Equation (20) to the 10X and 100X data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 18. (r^2 = coefficient of determination)
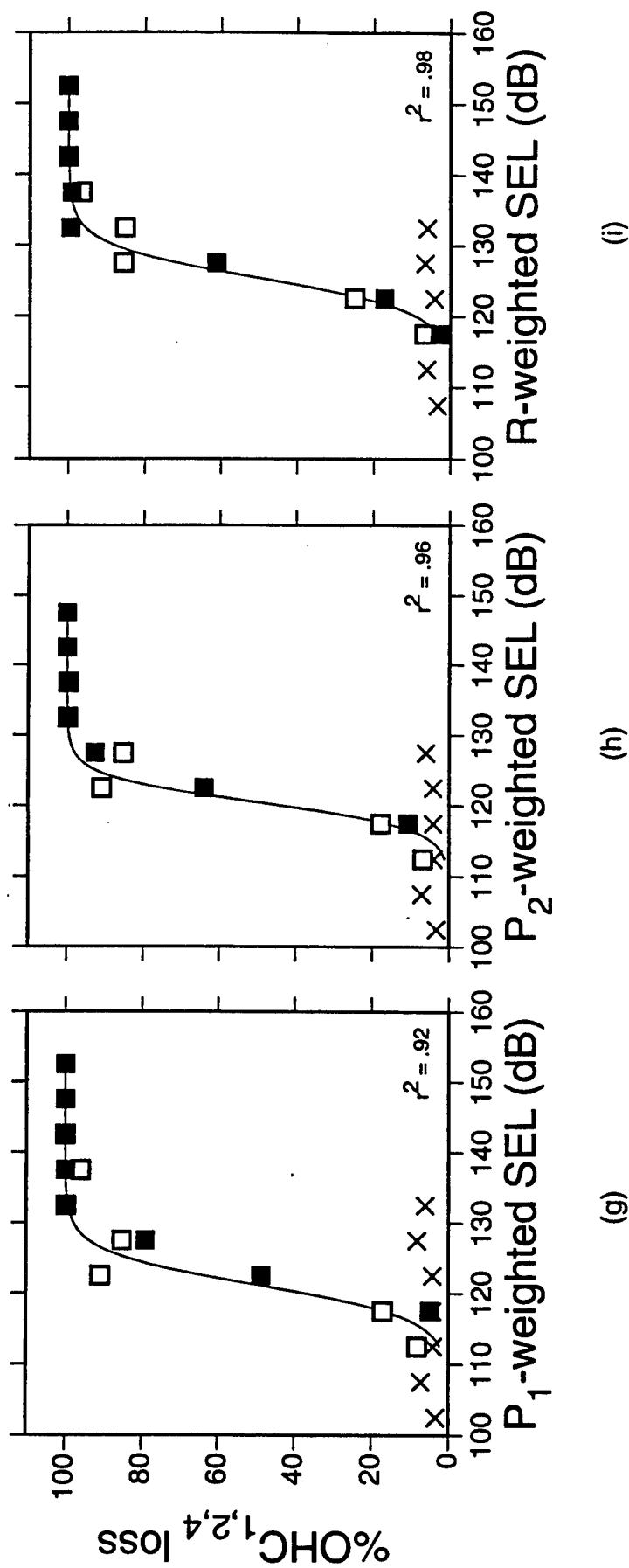
Figure 69 (d-f)   The 90th percentile of percent OHC loss in the cochlea over octave-band lengths of the basilar membrane

centered at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for all animals

exposed to 1, 10, or 100 impulses falling within 5 dB bins of the indicated level of the hazard index (d)

Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL. The solid line is the nonlinear regression fit

of Equation (20) to the 10X and 100X data. The three parameters, A, B, and C of Equation (20)

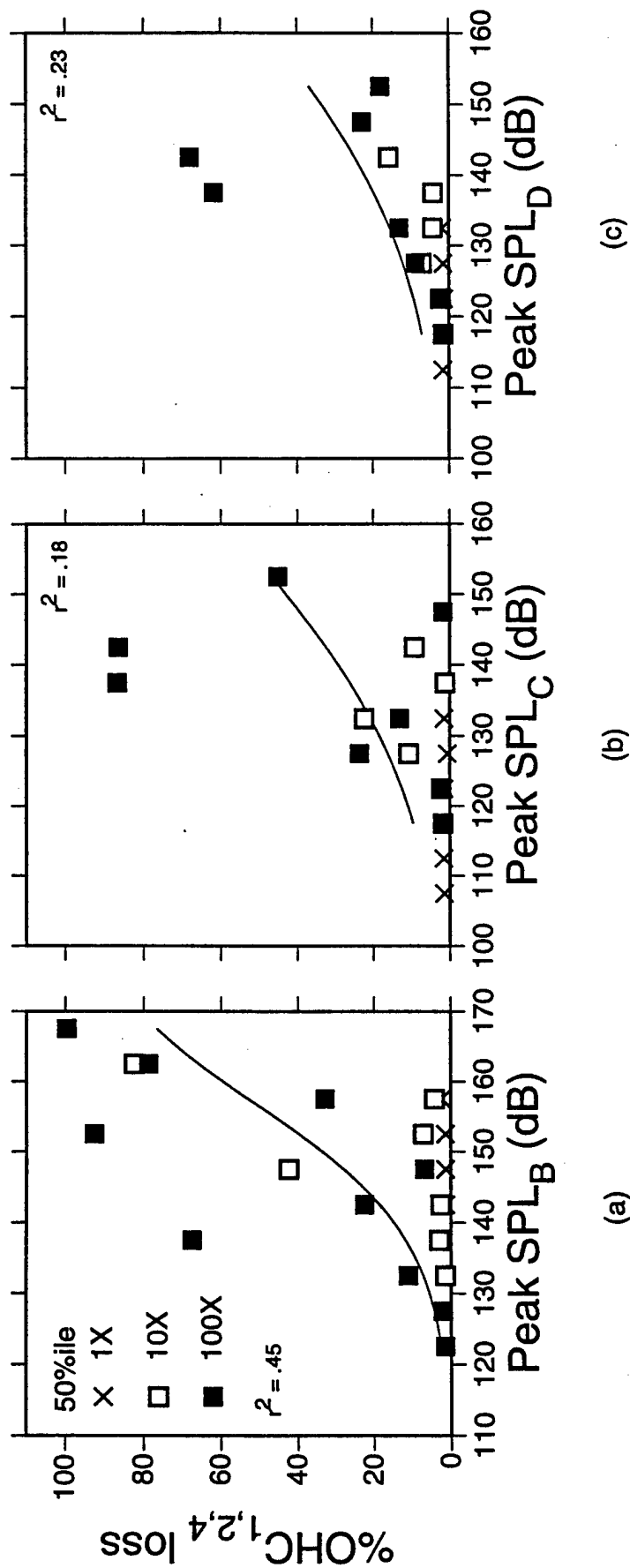corresponding to each regression line are listed in Table 18. (r^2 = coefficient of determination)

Figure 69 (g-i)   The 90th percentile of percent OHC loss in the cochlea over octave-band lengths of the basilar membrane

centered at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for all animals

exposed to 1, 10, or 100 impulses falling within 5 dB bins of the indicated level of the hazard index (g) P_1-

weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL. The solid line is the nonlinear regression fit of

Equation (20) to the 10X and 100X data. The three parameters, A, B, and C of Equation (20) corresponding

to each regression line are listed in Table 18. (r^2 = coefficient of determination)
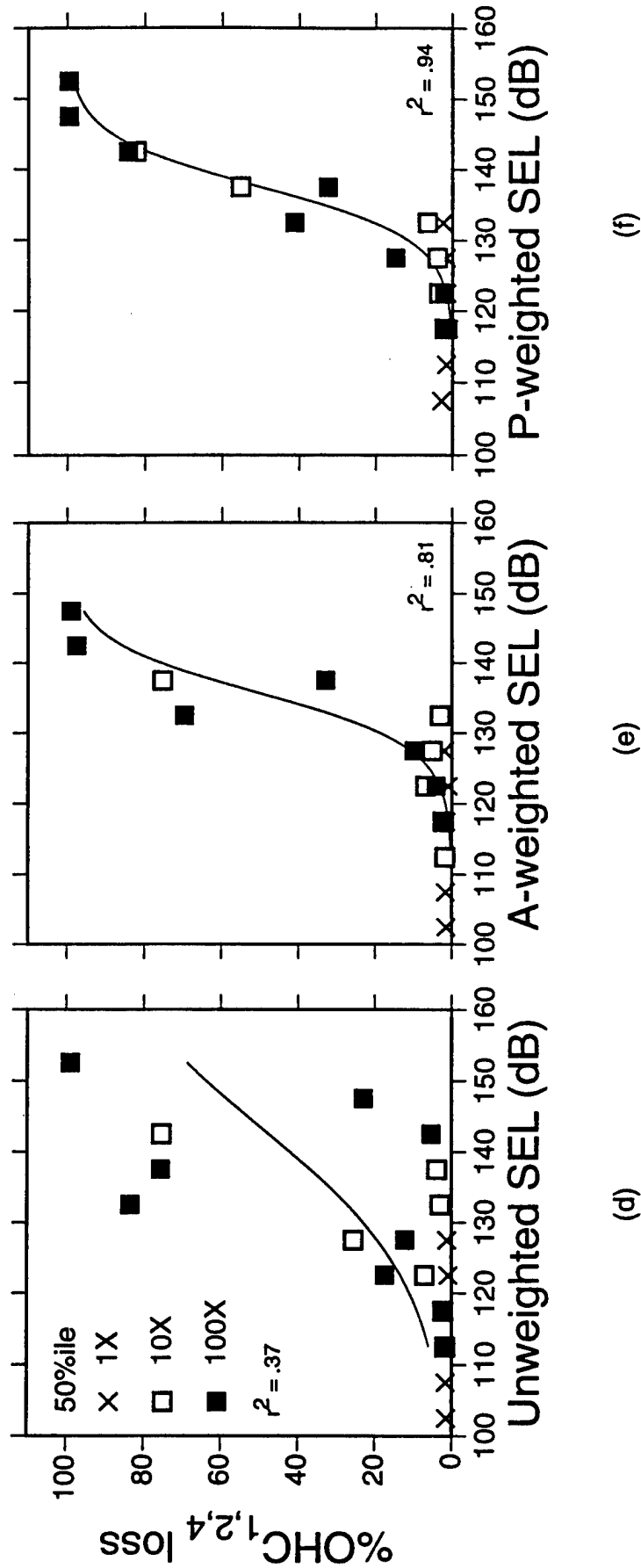
Figure 70 (a-c) The 50th percentile of percent OHC loss in the cochlea over octave-band lengths of the basilar membrane centered at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for all animals exposed to 1, 10, or 100 impulses falling within 5 dB bins of the indicated level of the hazard index (a) Peak SPLB, (b) Peak SPLC, and (c) Peak SPLD. The solid line is the nonlinear regression fit of Equation (20) to the 10X and 100X data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 18. (r^2 = coefficient of determination)
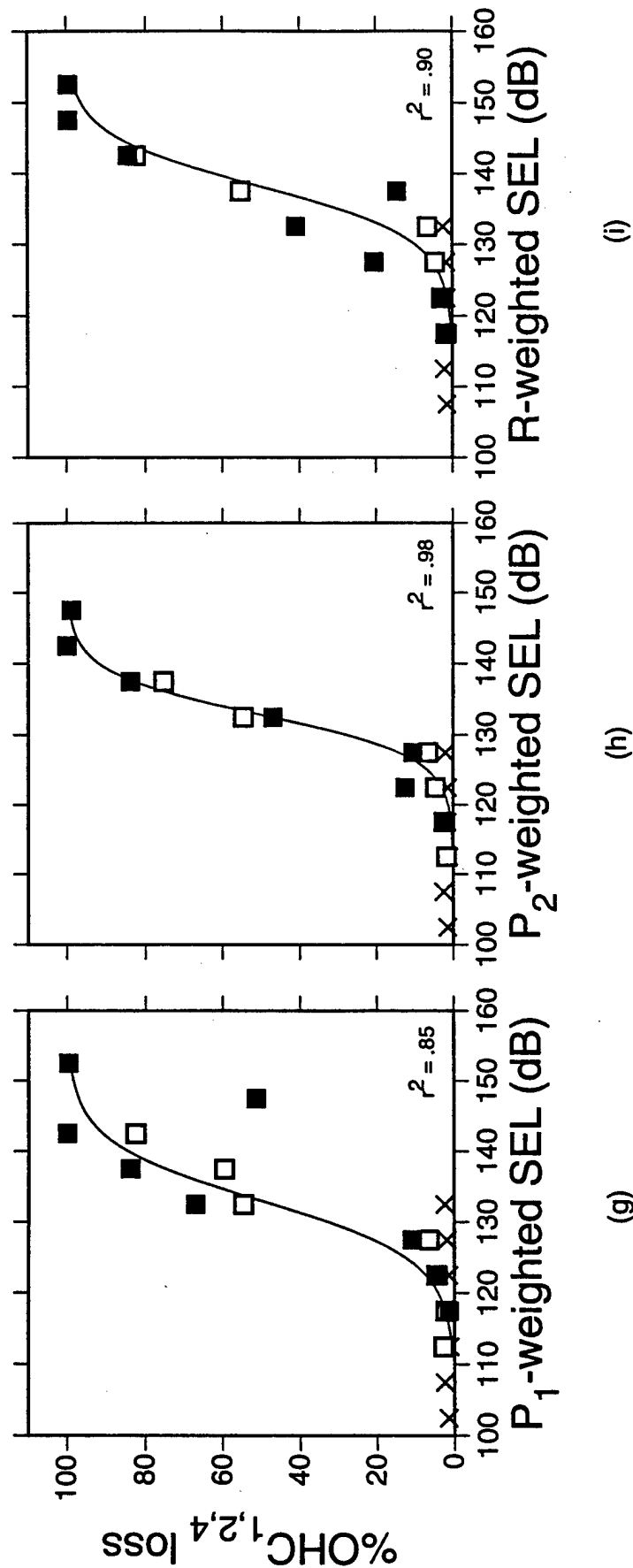
Figure 70 (d-f)   The 50th percentile of percent OHC loss in the cochlea over octave-band lengths of the basilar membrane

centered at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for all animals

exposed to 1, 10, or 100 impulses falling within 5 dB bins of the indicated level of the hazard index (d)

Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL.   The solid line is the nonlinear regression fit

of Equation (20) to the 10X and 100X data.   The three parameters, A, B, and C of Equation (20)

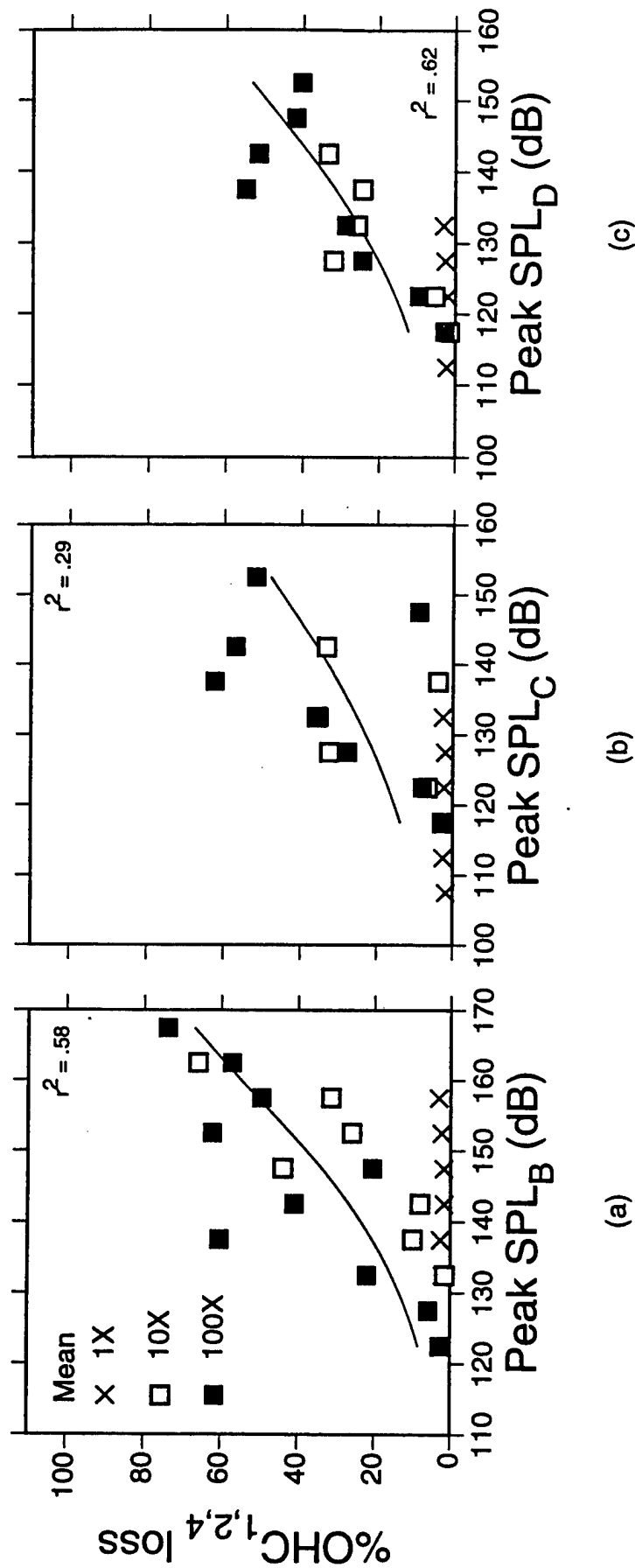corresponding to each regression line are listed in Table 18. (r^2 = coefficient of determination)

Figure 70 (g-i)   The 50th percentile of percent OHC loss in the cochlea over octave-band lengths of the basilar membrane centered at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for all animals exposed to 1, 10, or 100 impulses falling within 5 dB bins of the indicated level of the hazard index (g) P_1^- weighted SEL, (h) P_2^--weighted SEL, and (i) R-weighted SEL.   The solid line is the nonlinear regression fit of Equation (20) to the 10X and 100X data.   The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 18. (r^2 = coefficient of determination)
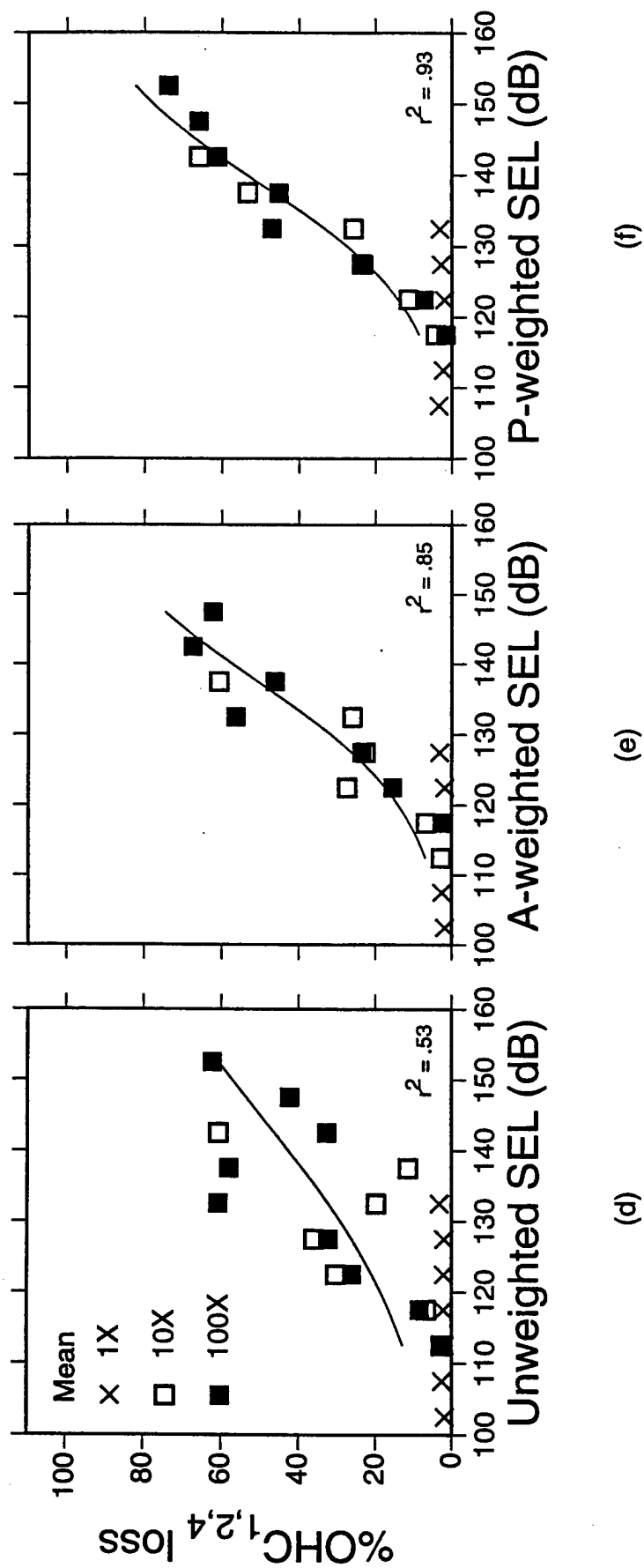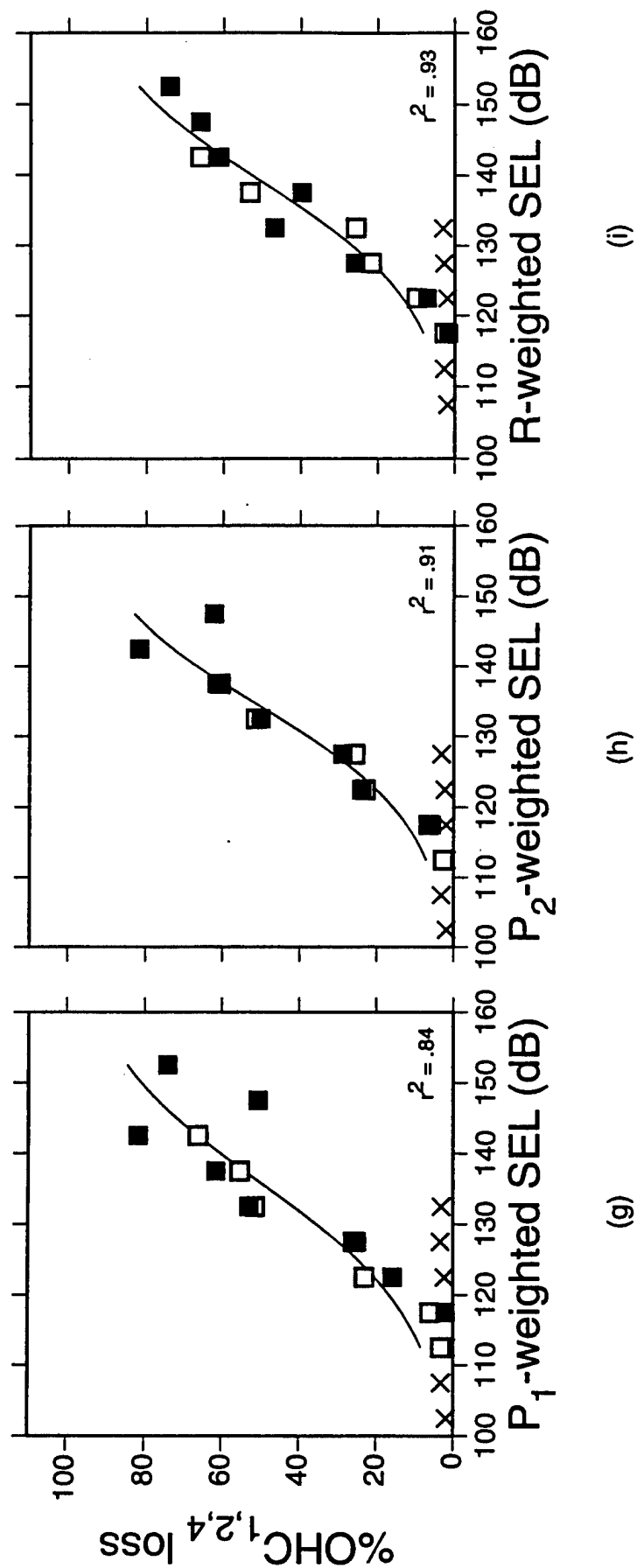
Figure 71 (a-c)   The mean percent OHC loss in the cochlea over octave-band lengths of the basilar membrane centered

at the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for all animals exposed

to 1, 10, or 100 impulses falling within 5 dB bins of the indicated level of the hazard index (a) Peak SPL_B,

(b) Peak SPL_C, and (c) Peak SPL_D.   The solid line is the nonlinear regression fit of Equation (20) to the

10X and 100X data.   The three parameters, A, B, and C of Equation (20) corresponding to each

regression line are listed in Table 18. (r^2 = coefficient of determination)

Figure 71 (d-f)   The mean percent OHC loss in the cochlea over octave-band lengths of the basilar membrane centered at

the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for all animals exposed to 1,

10, or 100 impulses falling within 5 dB bins of the indicated level of the hazard index (d) Unweighted SEL,

(e) A-weighted SEL, and (f) P-weighted SEL.   The solid line is the nonlinear regression fit of Equation (20)

to the 10X and 100X data.   The three parameters, A, B, and C of Equation (20) corresponding to each

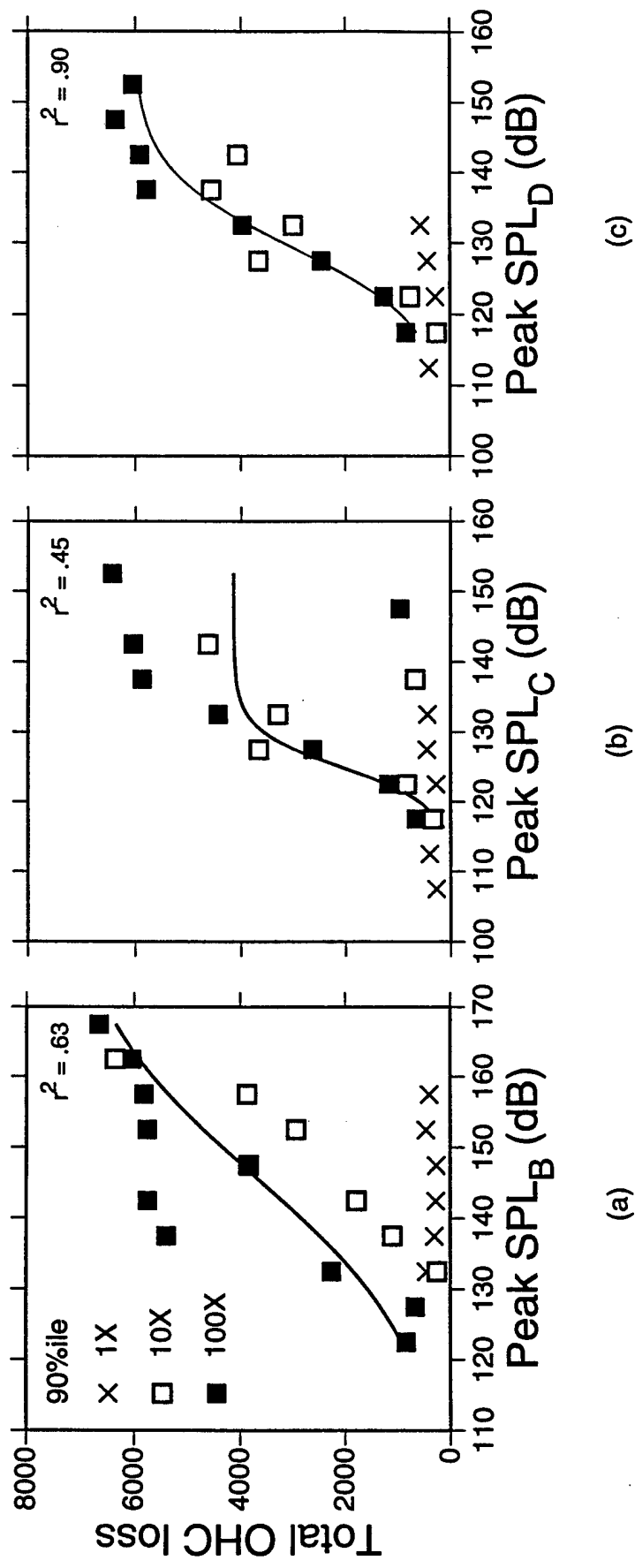regression line are listed in Table 18. (r^2 = coefficient of determination)
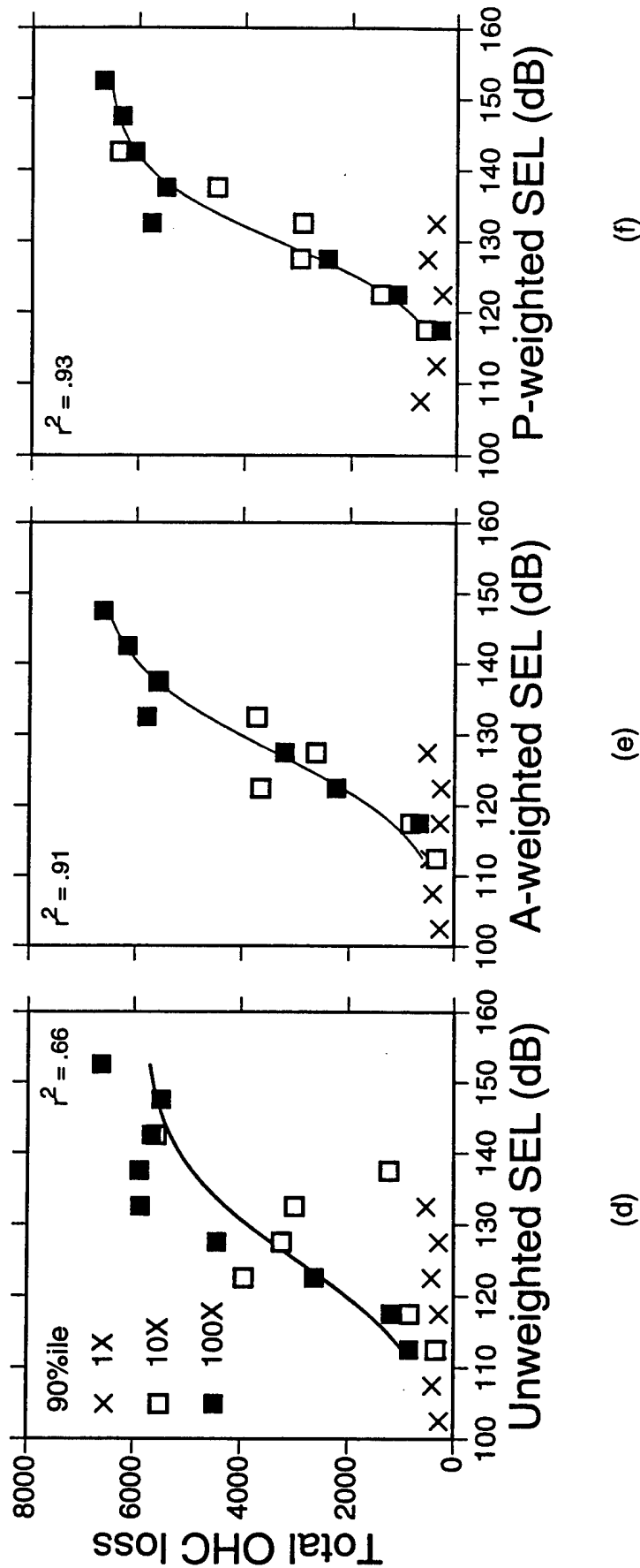
Figure 71 (g-i)   The mean percent OHC loss in the cochlea over octave-band lengths of the basilar membrane centered at

the locations correlated with the 1, 2, and 4 kHz audiometric test frequencies for all animals exposed to 1, 10,

or 100 impulses falling within 5 dB bins of the indicated level of the hazard index (g) P_1-weighted SEL, (h) P_2-

weighted SEL, and (i) R-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the

10X and 100X data. The three parameters, A, B, and C of Equation (20) corresponding to each regression

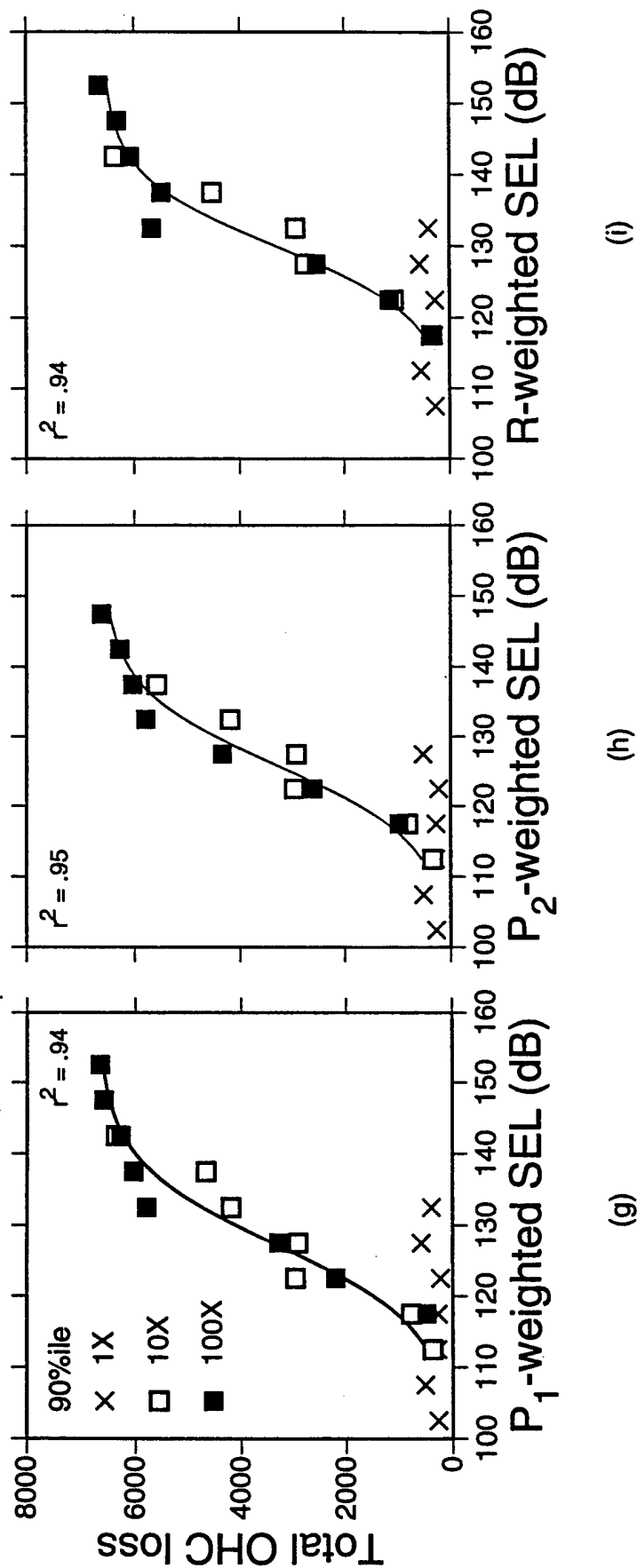line are listed in Table 18. (r^2 = coefficient of determination)

Figure 72 (a-c)   The 90th percentile of total OHC loss for all animals exposed to 1, 10, or 100 impulses falling within 5 dB bins of the indicated level of the hazard index (a) Peak SPL$_B$, (b) Peak SPL$_C$, and (c) Peak SPL$_D$. The solid line is the nonlinear regression fit of Equation (20) to the 10X and 100X data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 19. (r^2 = coefficient of determination)
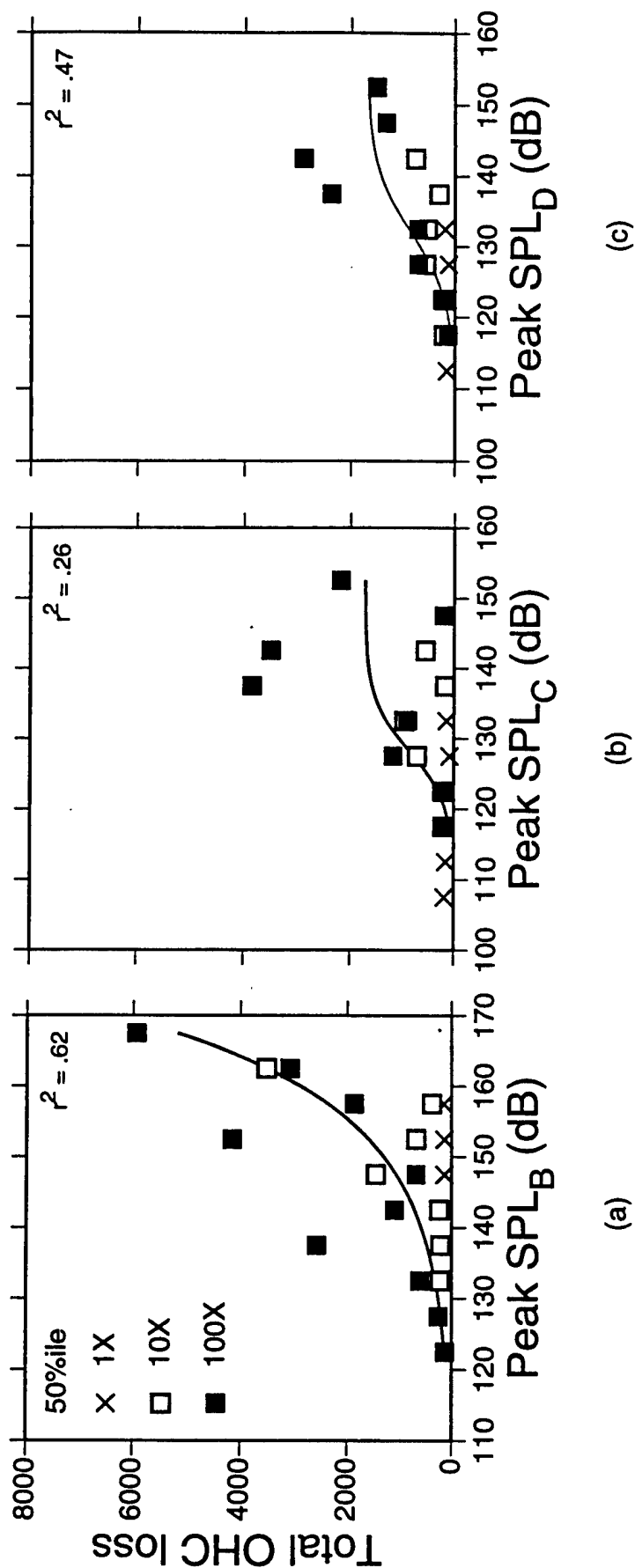
Figure 72 (d-f)   The 90th percentile of total OHC loss for all animals exposed to 1, 10, or 100 impulses falling within 5 dB bins of the indicated level of the hazard index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the 10X and 100X data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 19. (r^2 = coefficient of determination)
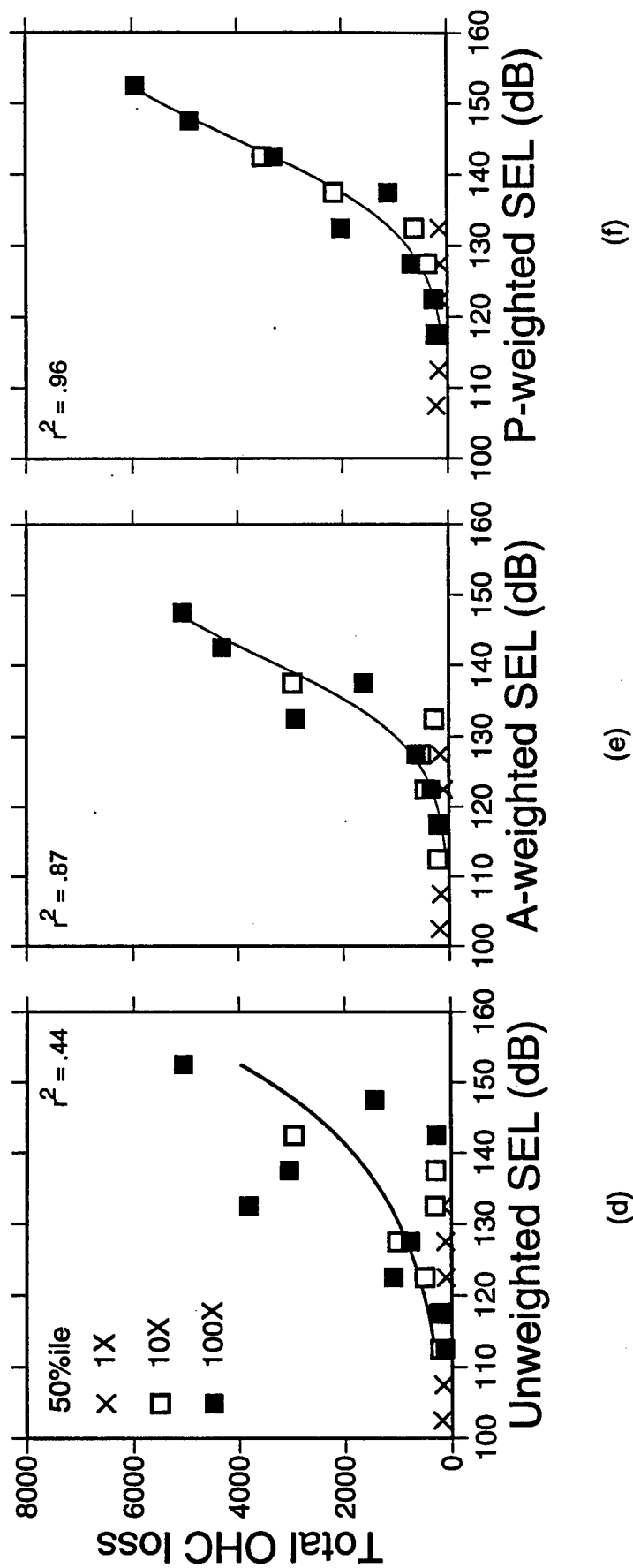
Figure 72 (g-i) . The 90th percentile of total OHC loss for all animals exposed to 1, 10, or 100 impulses falling within 5 dB bins of the indicated level of the hazard index (g) P_1-weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the 10X and 100X data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 19. (r^2 = coefficient of determination)
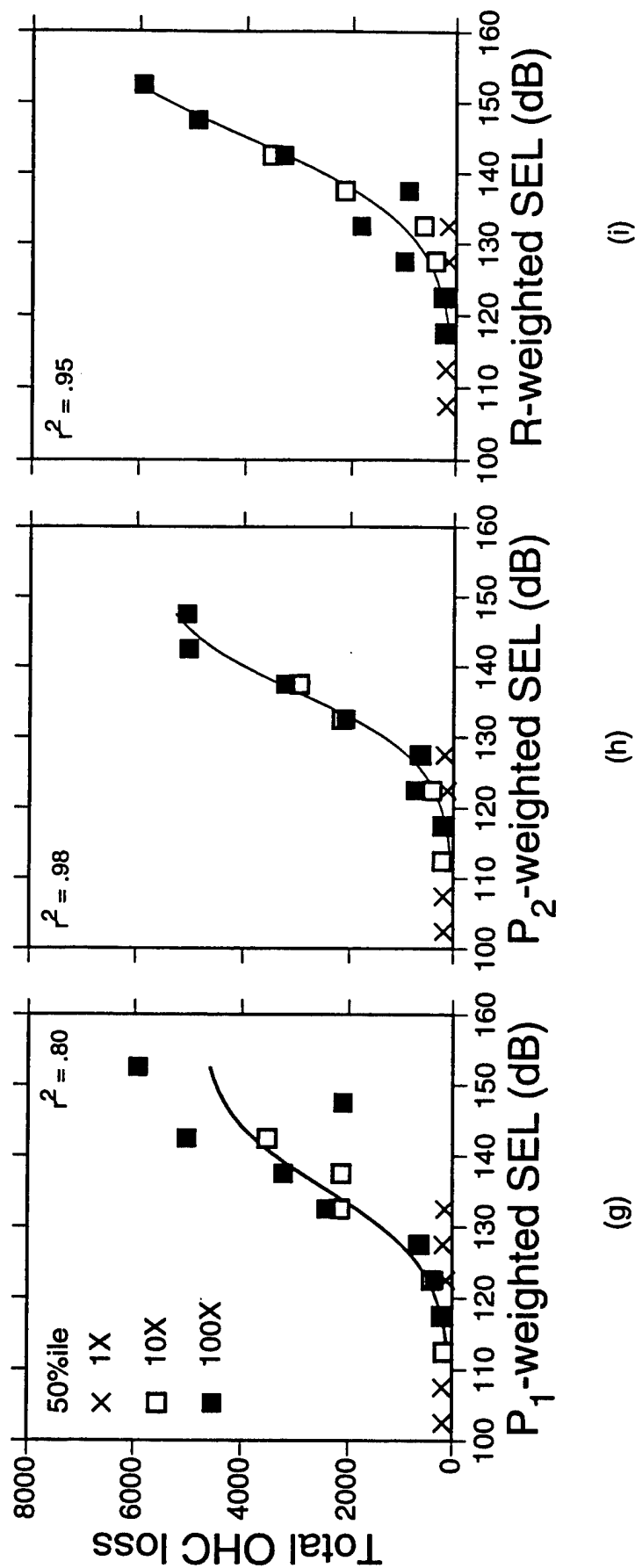
Figure 73 (a-c)   The 50th percentile of total OHC loss for all animals exposed to 1, 10, or 100 impulses falling within 5 dB bins of the indicated level of the hazard index (a) Peak SPL_B, (b) Peak SPL_C, and (c) Peak SPL_D. The solid line is the nonlinear regression fit of Equation (20) to the 10X and 100X data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 19. (r^2 = coefficient of determination)
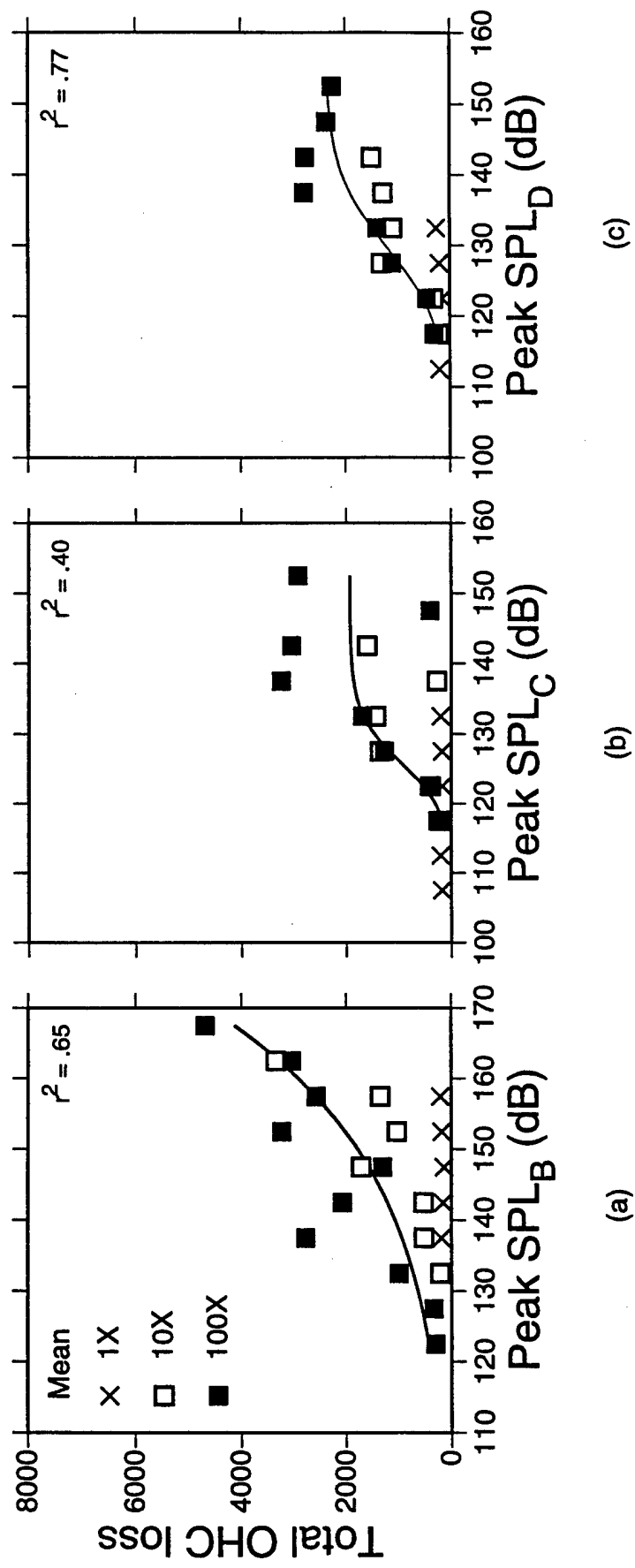
Figure 73 (d-f)   The 50th percentile of total OHC loss for all animals exposed to 1, 10, or 100 impulses falling within 5 dB bins of the indicated level of the hazard index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL. The three

The solid line is the nonlinear regression fit of Equation (20) to the 10X and 100X data. The three

parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 19. (r^2 = coefficient of determination)
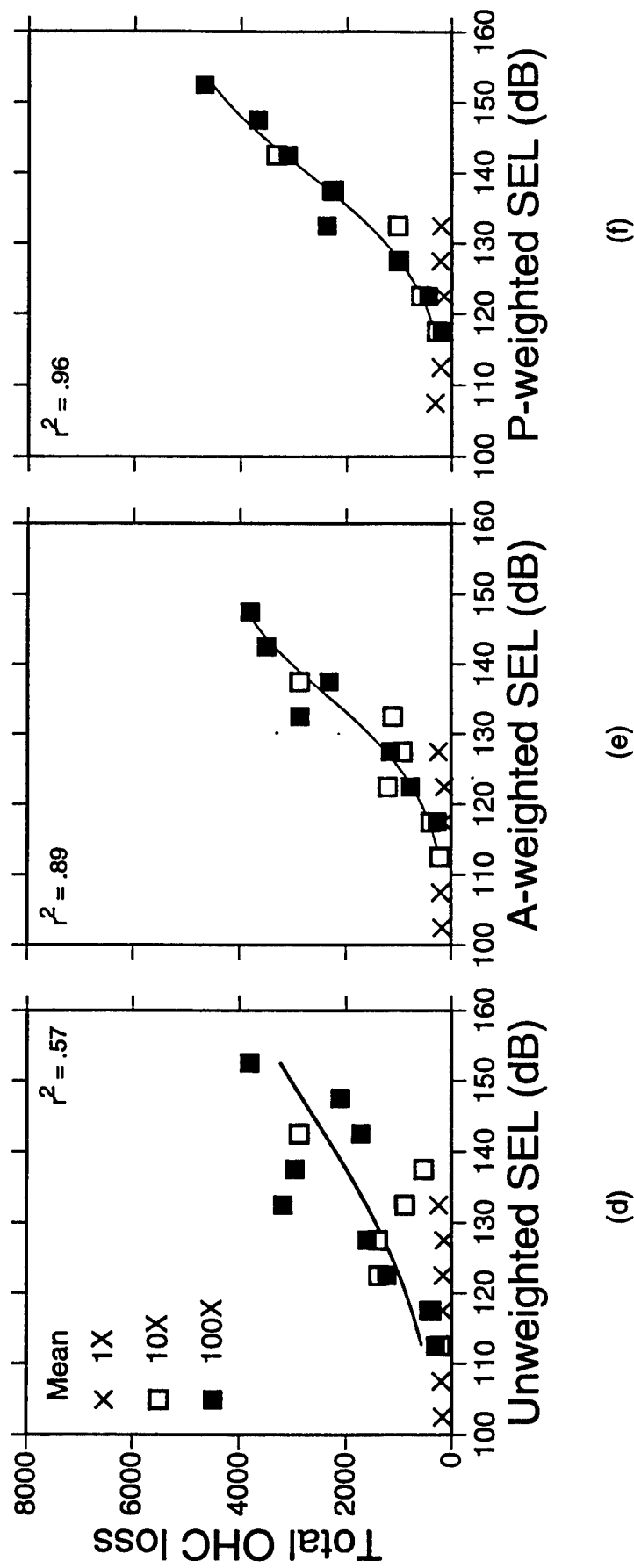
Figure 73 (g-i)   The 50th percentile of total OHC loss for all animals exposed to 1, 10, or 100 impulses falling within 5 dB bins of the indicated level of the hazard index (g) P₁-weighted SEL, (h) P₂-weighted SEL, and (i) R-weighted SEL.

The solid line is the nonlinear regression fit of Equation (20) to the 10X and 100X data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 19. (r^2 = coefficient of determination)
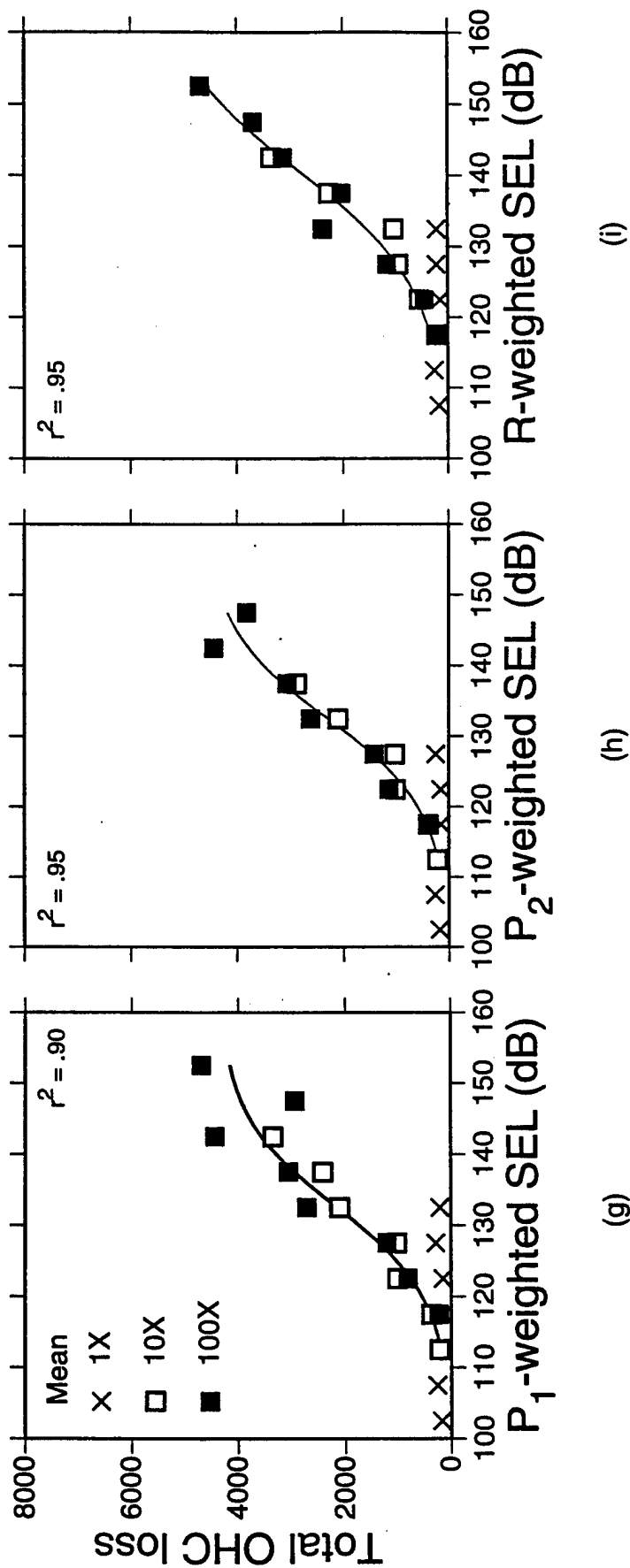
Figure 74 (a-c)   The mean total OHC loss for all animals exposed to 1, 10, or 100 impulses falling within 5 dB bins of the indicated level of the hazard index (a) Peak SPL_B, (b) Peak SPL_C, and (c) Peak SPL_D. The solid line is the nonlinear regression fit of Equation (20) to the 10X and 100X data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 19. (r^2 = coefficient of determination)
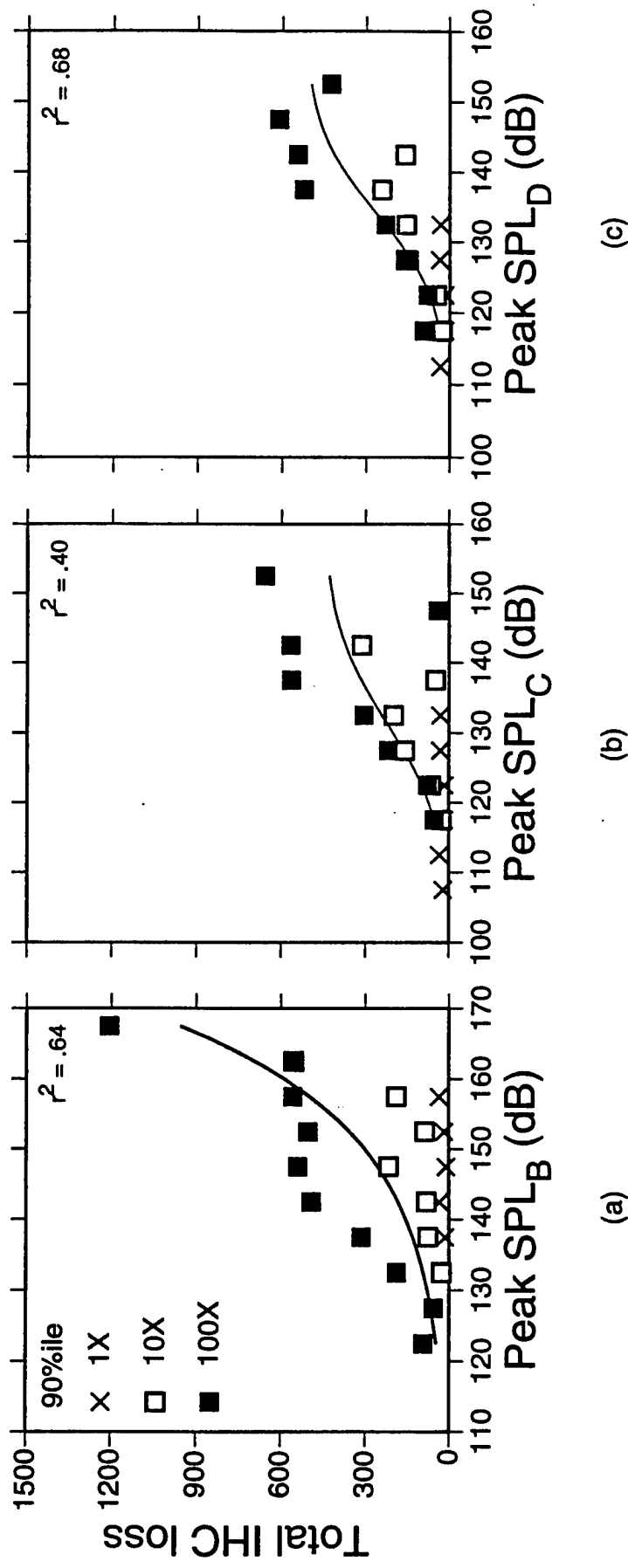
Figure 74 (d-f)   The mean total OHC loss for all animals exposed to 1, 10, or 100 impulses falling within 5 dB bins of the

indicated level of the hazard index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL. The

solid line is the nonlinear regression fit of Equation (20) to the 10X and 100X data. The three parameters, A,

B, and C of Equation (20) corresponding to each regression line are listed in Table 19. (r^2 = coefficient of
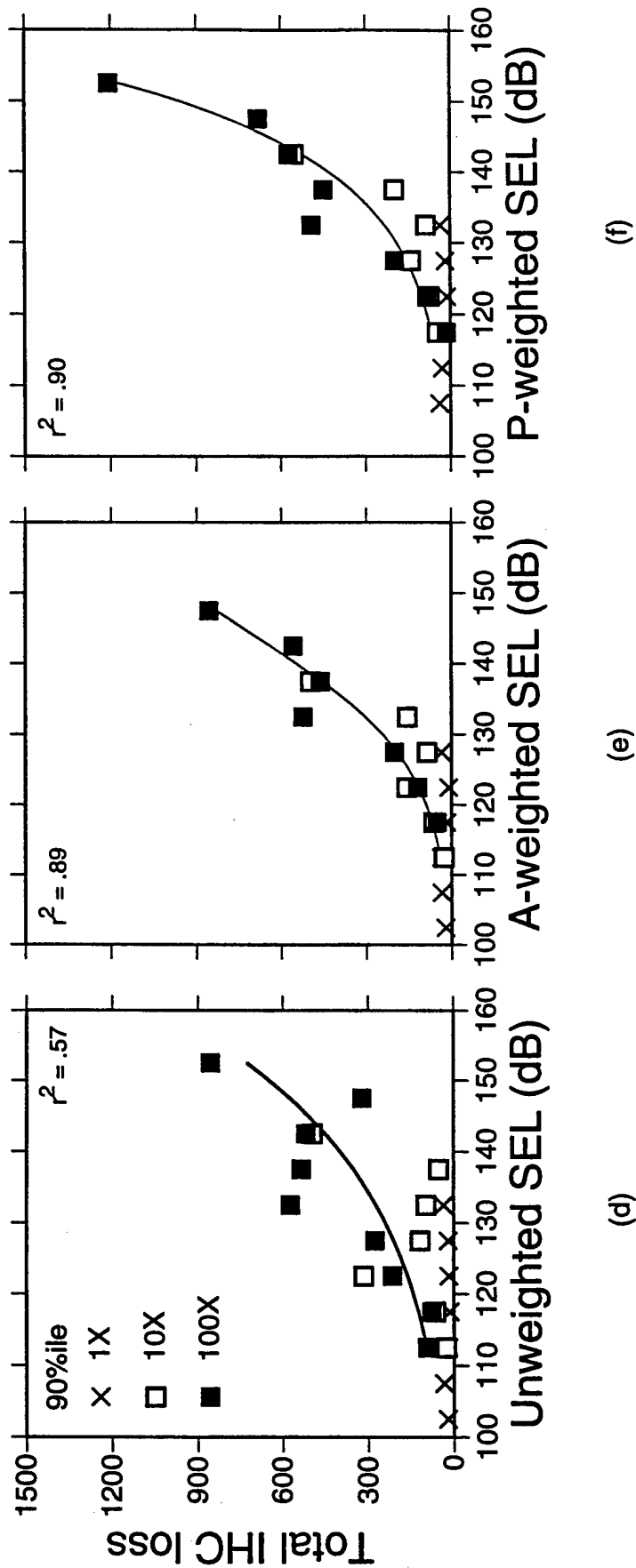
determination)

Figure 74 (g-i)   The mean total OHC loss for all animals exposed to 1, 10, or 100 impulses falling within 5 dB bins of the indicated level of the hazard index (g) P_1-weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the 10X and 100X data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 19. (r^2 = coefficient of determination)
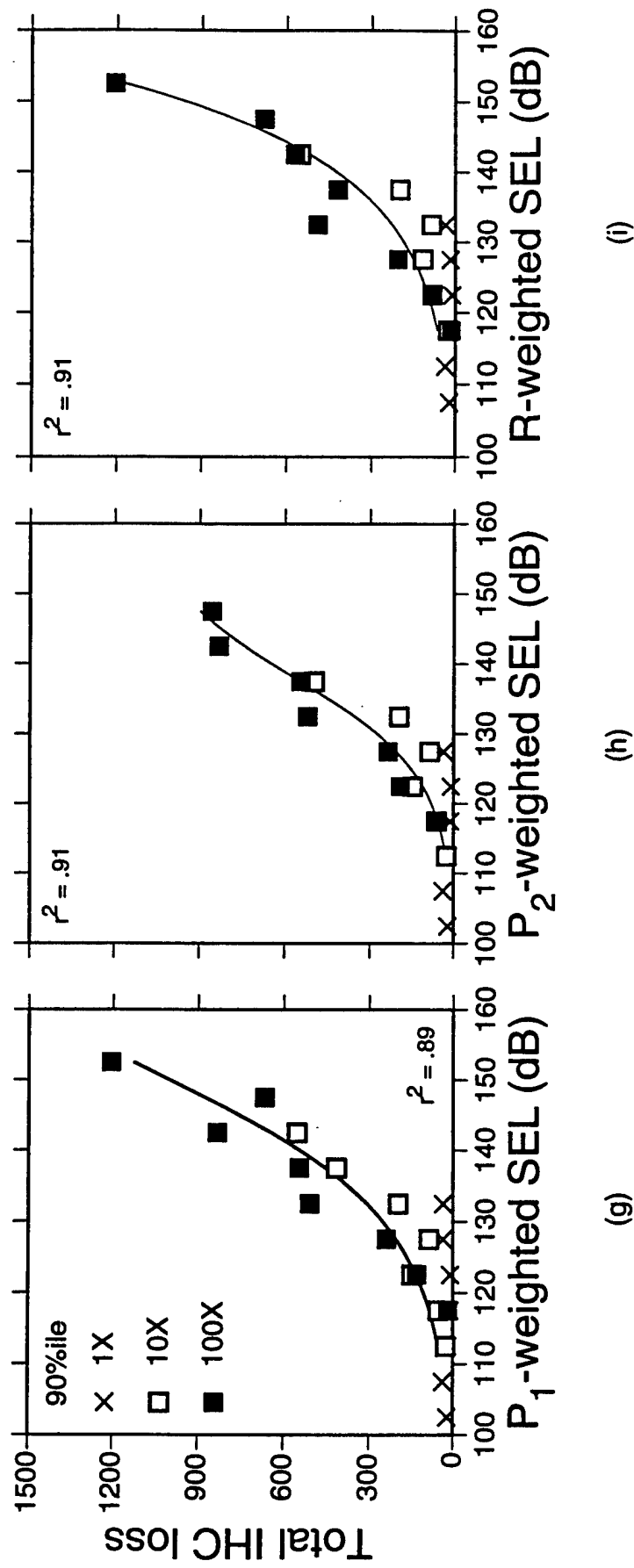
Figure 75 (a-c)   The 90th percentile of total IHC loss for all animals exposed to 1, 10, or 100 impulses falling within 5 dB

bins of the indicated level of the hazard index (a) Peak SPL_B, (b) Peak SPL_C, and (c) Peak SPL_D.   The

solid line is the nonlinear regression fit of Equation (20) to the 10X and 100X data.   The three parameters,

A, B, and C of Equation (20) corresponding to each regression line are listed in Table 20. (r^2 = coefficient
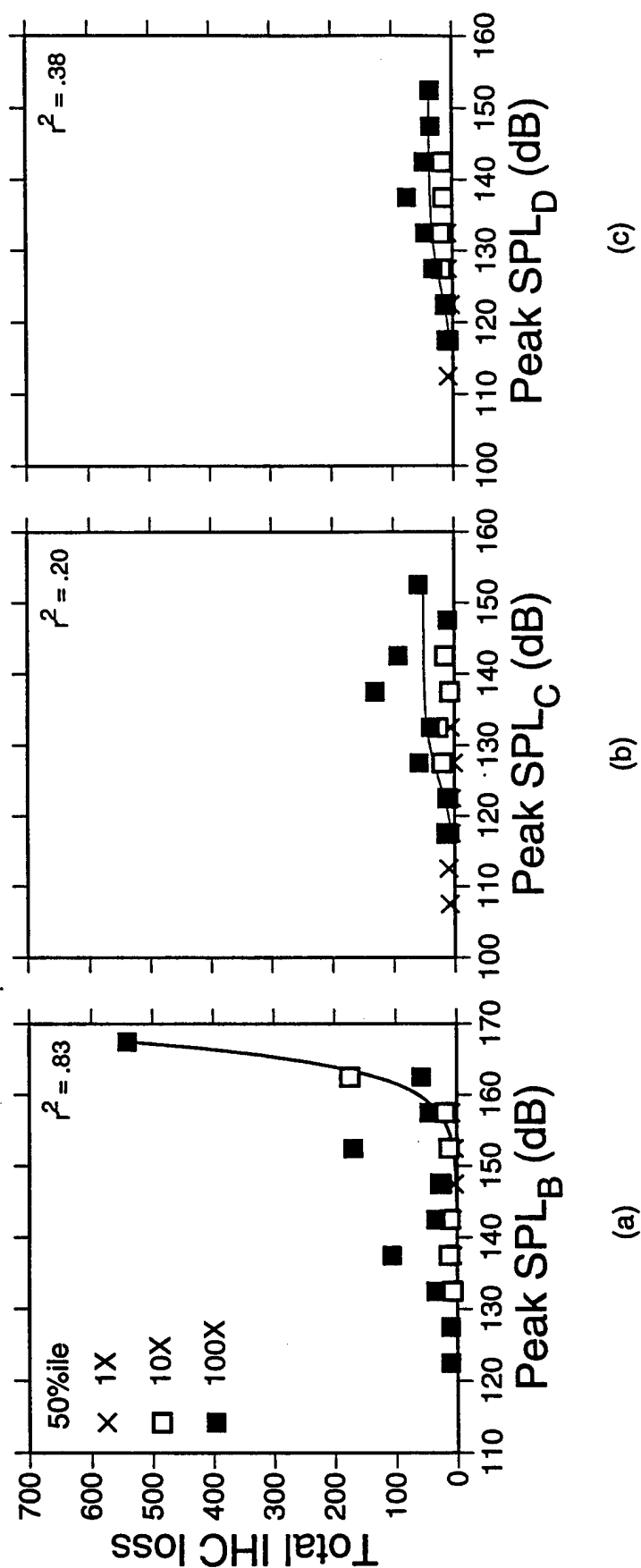
of determination)

Figure 75 (d-f) The 90th percentile of total IHC loss for all animals exposed to 1, 10, or 100 impulses falling within 5 dB bins of the indicated level of the hazard index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the 10X and 100X data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 20. (r^2 = coefficient of determination)
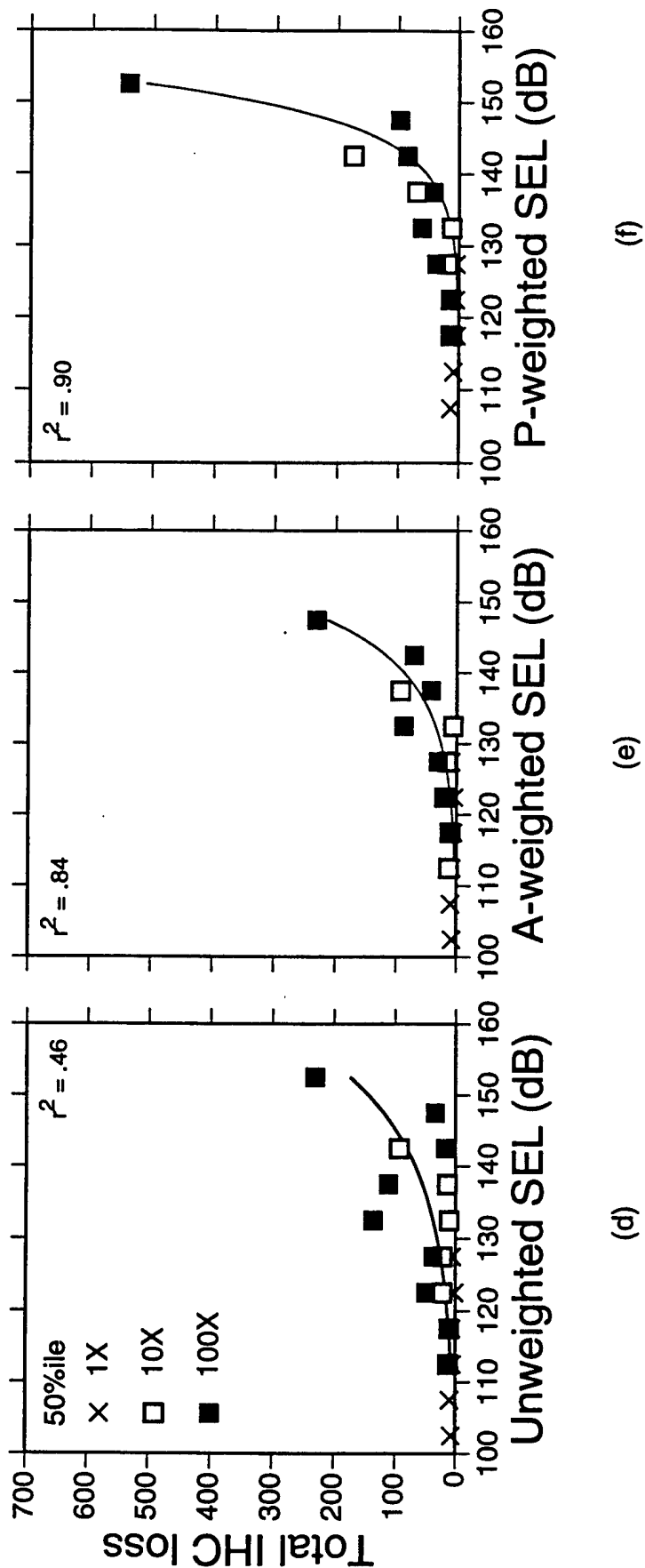
Figure 75 (g-i)   The 90th percentile of total IHC loss for all animals exposed to 1, 10, or 100 impulses falling within 5 dB bins

of the indicated level of the hazard index (g) P$_1$-weighted SEL, (h) P$_2$-weighted SEL, and (i) R-weighted SEL.

The solid line is the nonlinear regression fit of Equation (20) to the 10X and 100X data. The three

parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 20. (r^2 =
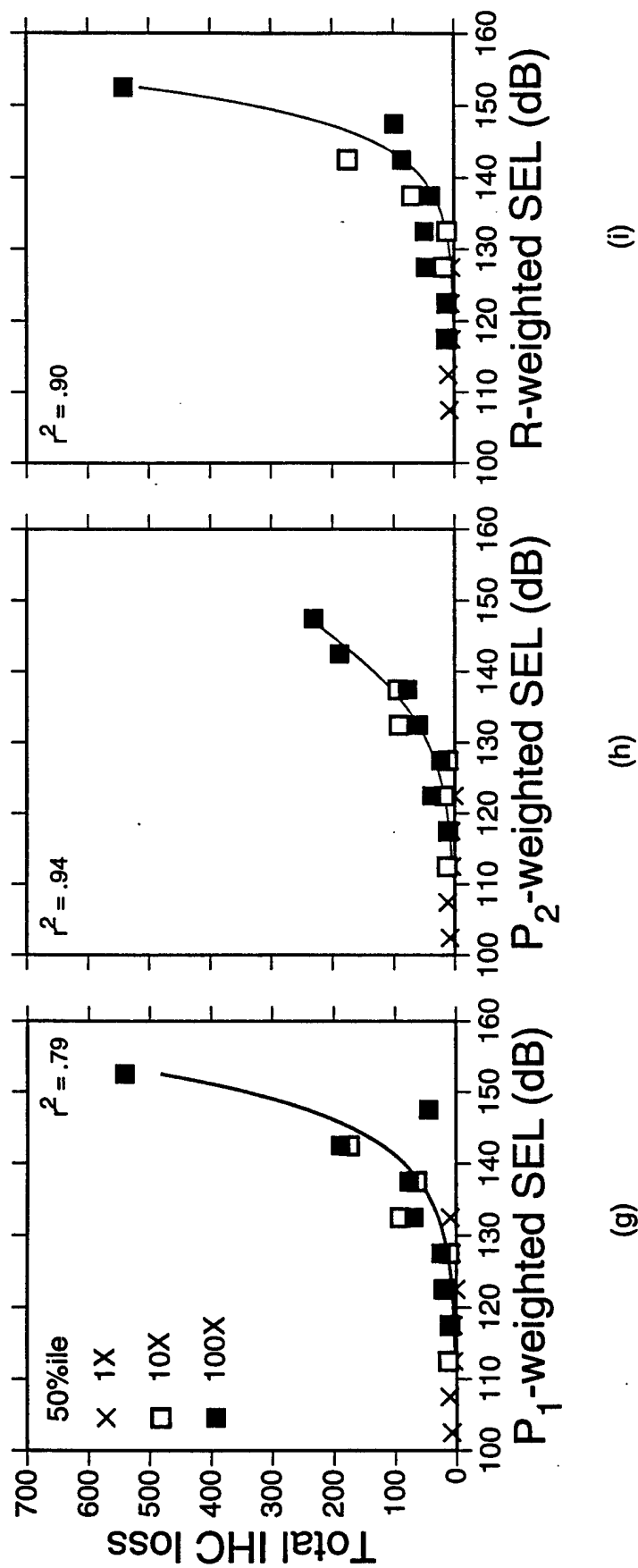
coefficient of determination)

Figure 76 (a-c) The 50th percentile of total IHC loss for all animals exposed to 1, 10, or 100 impulses falling within 5 dB bins of the indicated level of the hazard index (a) Peak SPL_B, (b) Peak SPL_C, and (c) Peak SPL_D. The solid line is the nonlinear regression fit of Equation (20) to the 10X and 100X data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 20. (r^2 = coefficient of determination)
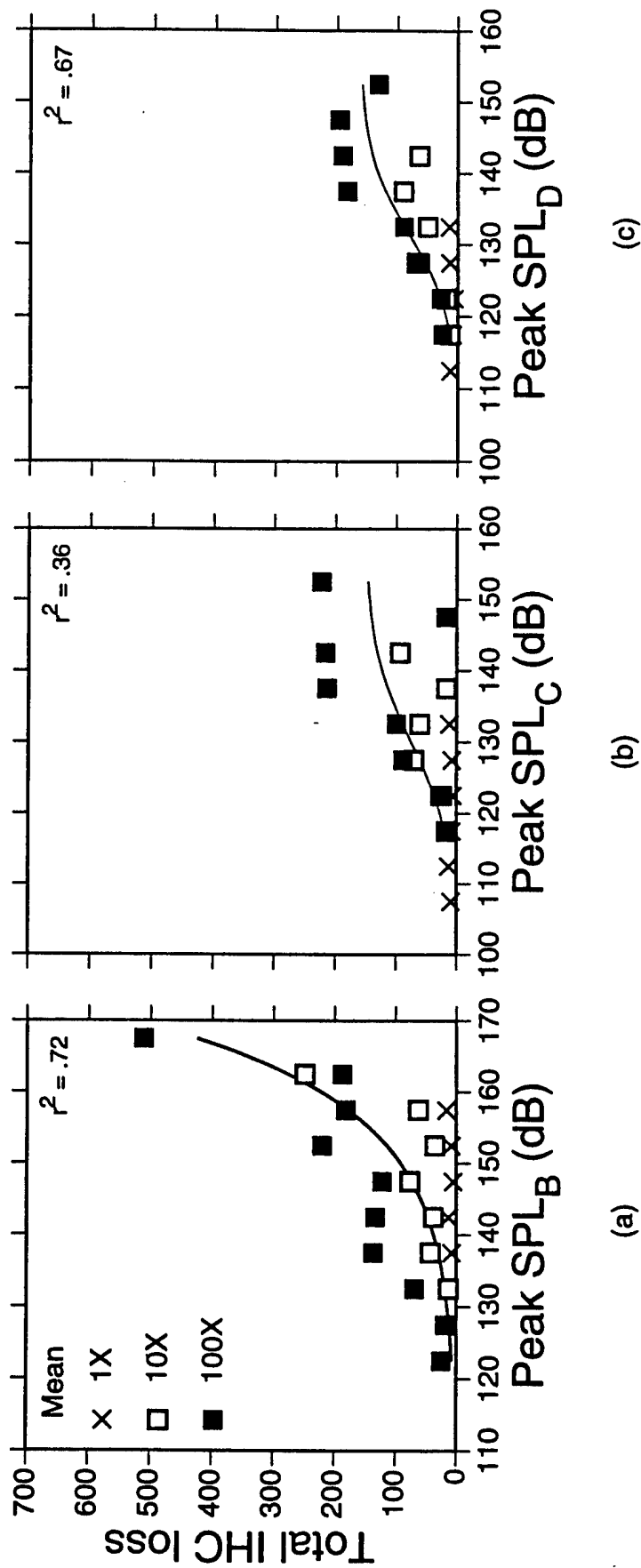
Figure 76 (d-f) The 50th percentile of total IHC loss for all animals exposed to 1, 10, or 100 impulses falling within 5 dB bins of the indicated level of the hazard index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL. The solid line is the nonlinear regression fit of Equation (20) to the 10X and 100X data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 20. (r^2 = coefficient of determination)
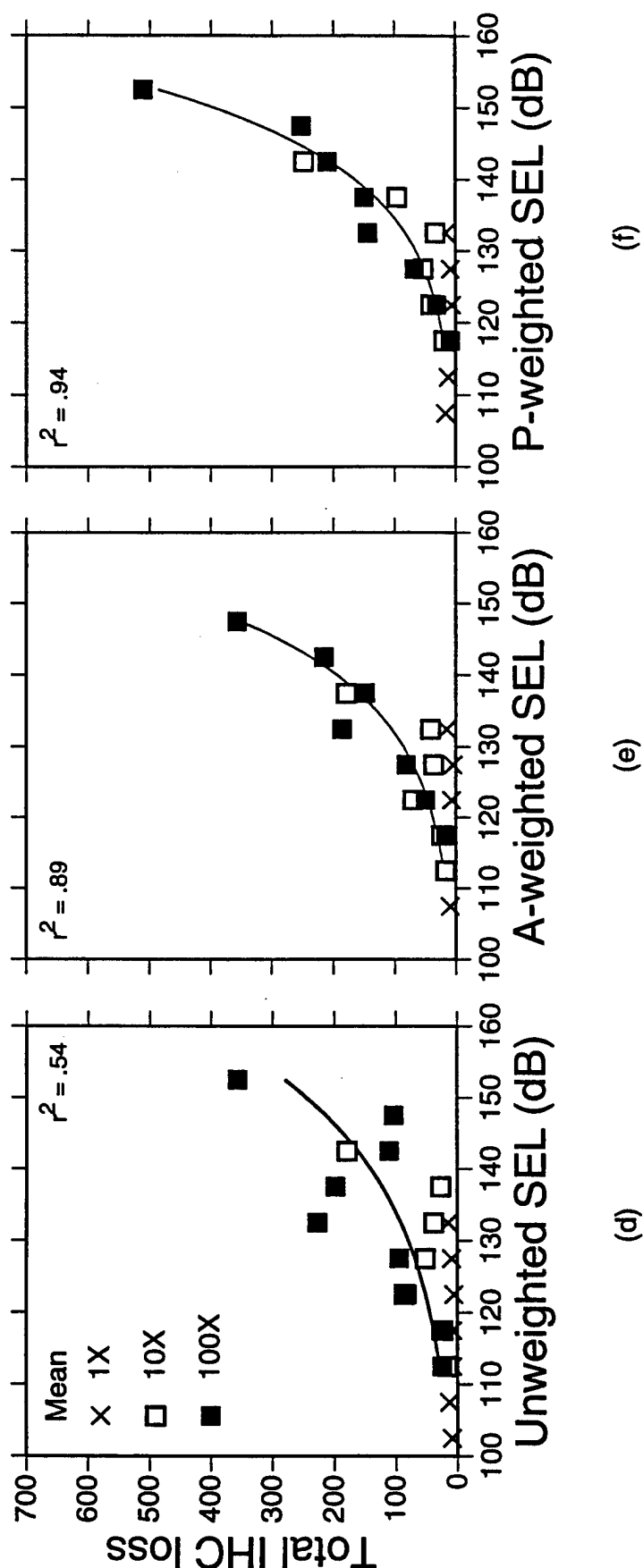
Figure 76 (g-i)   The 50th percentile of total IHC loss for all animals exposed to 1, 10, or 100 impulses falling within 5 dB bins

of the indicated level of the hazard index (g) P_1-weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL.

The solid line is the nonlinear regression fit of Equation (20) to the 10X and 100X data. The three

parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 20. (r^2 =
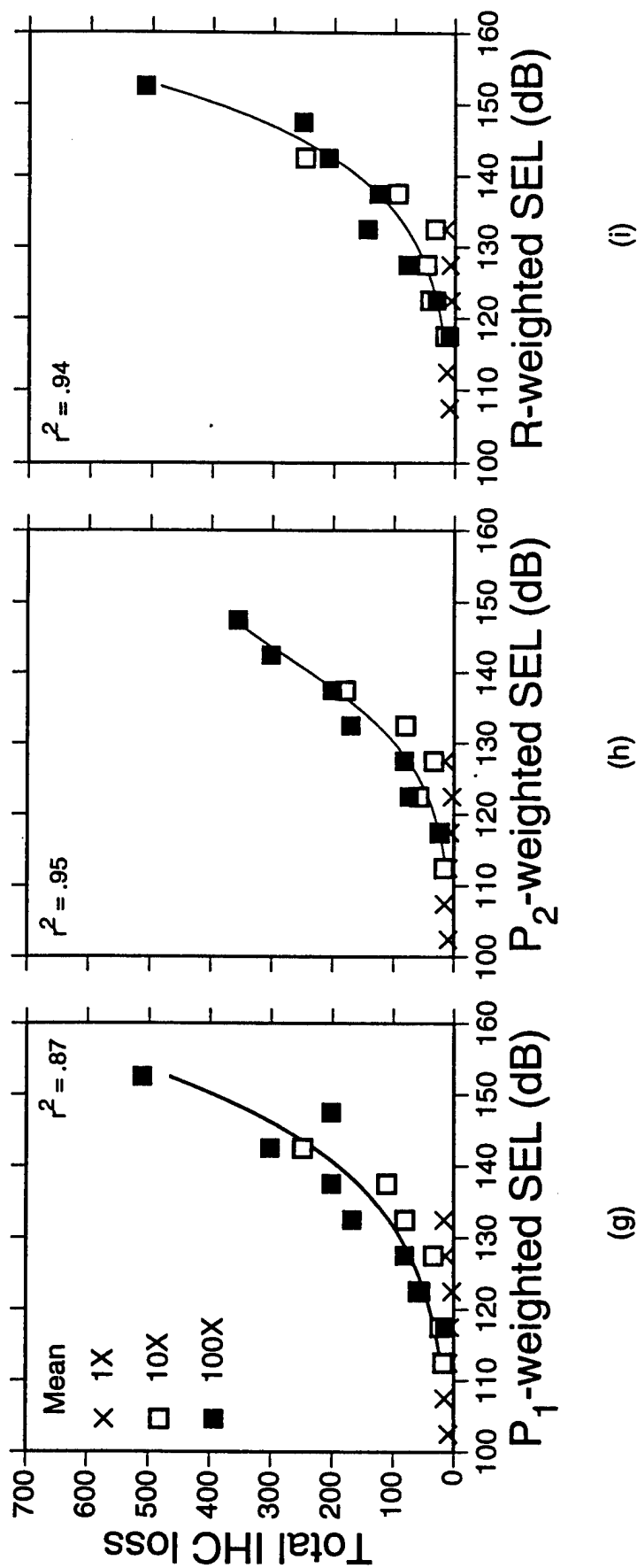
coefficient of determination)

Figure 77 (a-c)   The mean total IHC loss for all animals exposed to 1, 10, or 100 impulses falling within 5 dB bins of the indicated level of the hazard index (a) Peak SPL_B, (b) Peak SPL_C, and (c) Peak SPL_D. The solid line is the nonlinear regression fit of Equation (20) to the 10X and 100X data. The three parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 20. (r^2 = coefficient of determination)
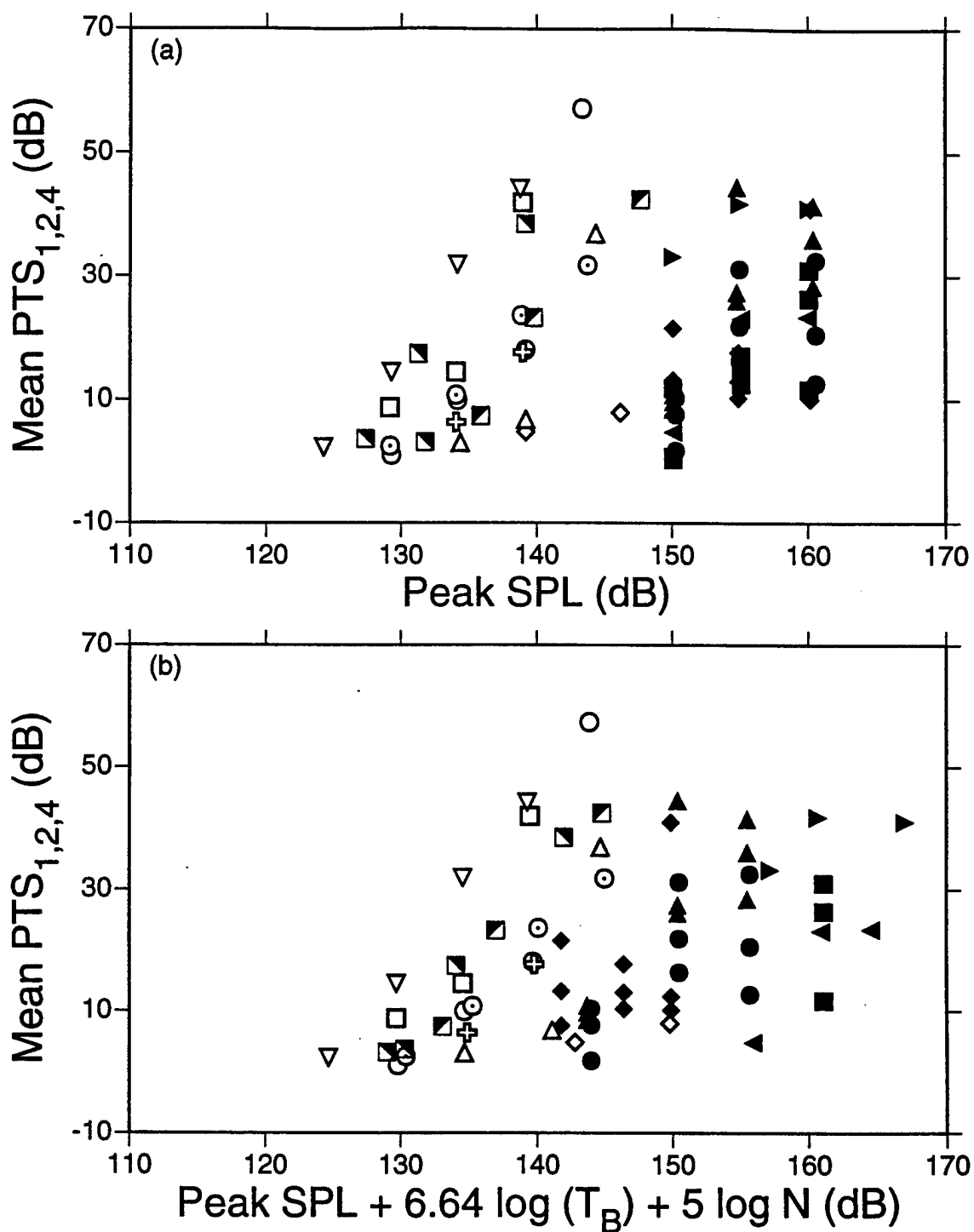
Figure 77 (d-f)   The mean total IHC loss for all animals exposed to 1, 10, or 100 impulses falling within 5 dB bins of the

indicated level of the hazard index (d) Unweighted SEL, (e) A-weighted SEL, and (f) P-weighted SEL.

The solid line is the nonlinear regression fit of Equation (20) to the 10X and 100X data. The three

parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 20. (r^2

= coefficient of determination)

Figure 77 (g-i)   The mean total IHC loss for all animals exposed to 1, 10, or 100 impulses falling within 5 dB bins of the

indicated level of the hazard index (g) P_1-weighted SEL, (h) P_2-weighted SEL, and (i) R-weighted SEL.

The solid line is the nonlinear regression fit of Equation (20) to the 10X and 100X data. The three

parameters, A, B, and C of Equation (20) corresponding to each regression line are listed in Table 20. (r^2
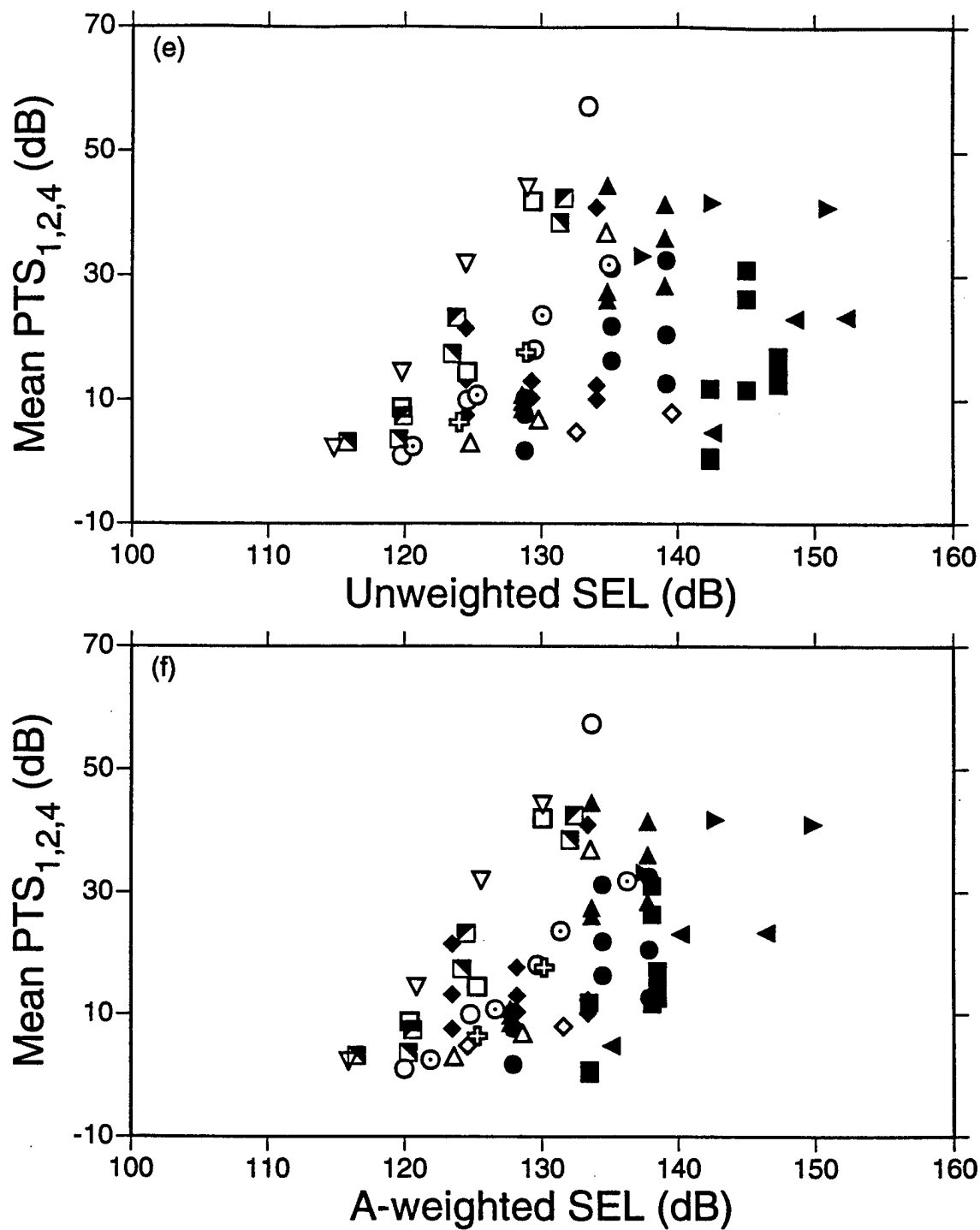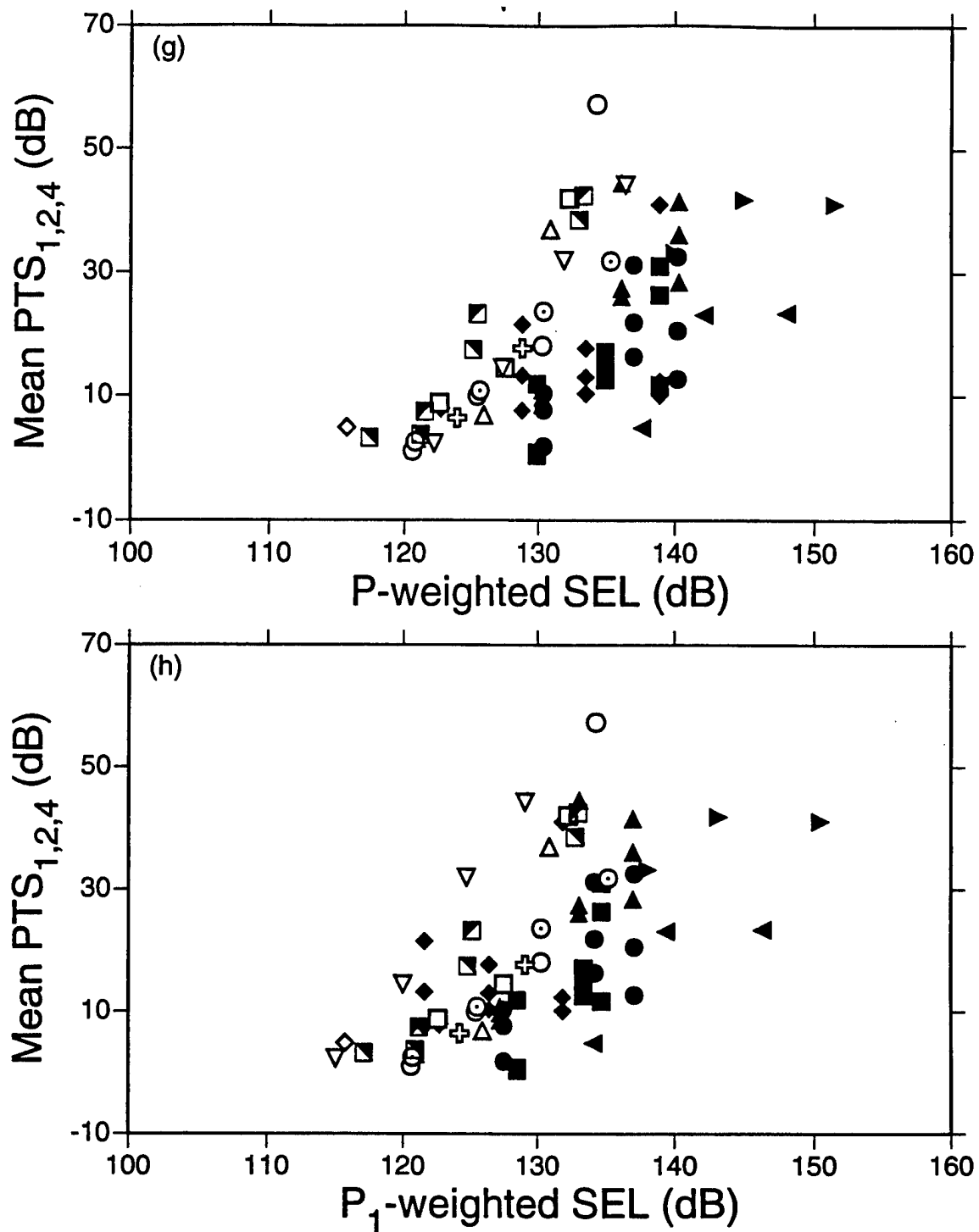
= coefficient of determination)

Figure 78. Mean PTS measured at the 1, 2, and 4 kHz audiometric test frequencies for groups of animals exposed to 100 impulses from one of 16 impulse noise sources for different levels of the hazard index: (a) peak SPL and (b) Peak SPL$_B$. The key to the symbols is found in Table 21.
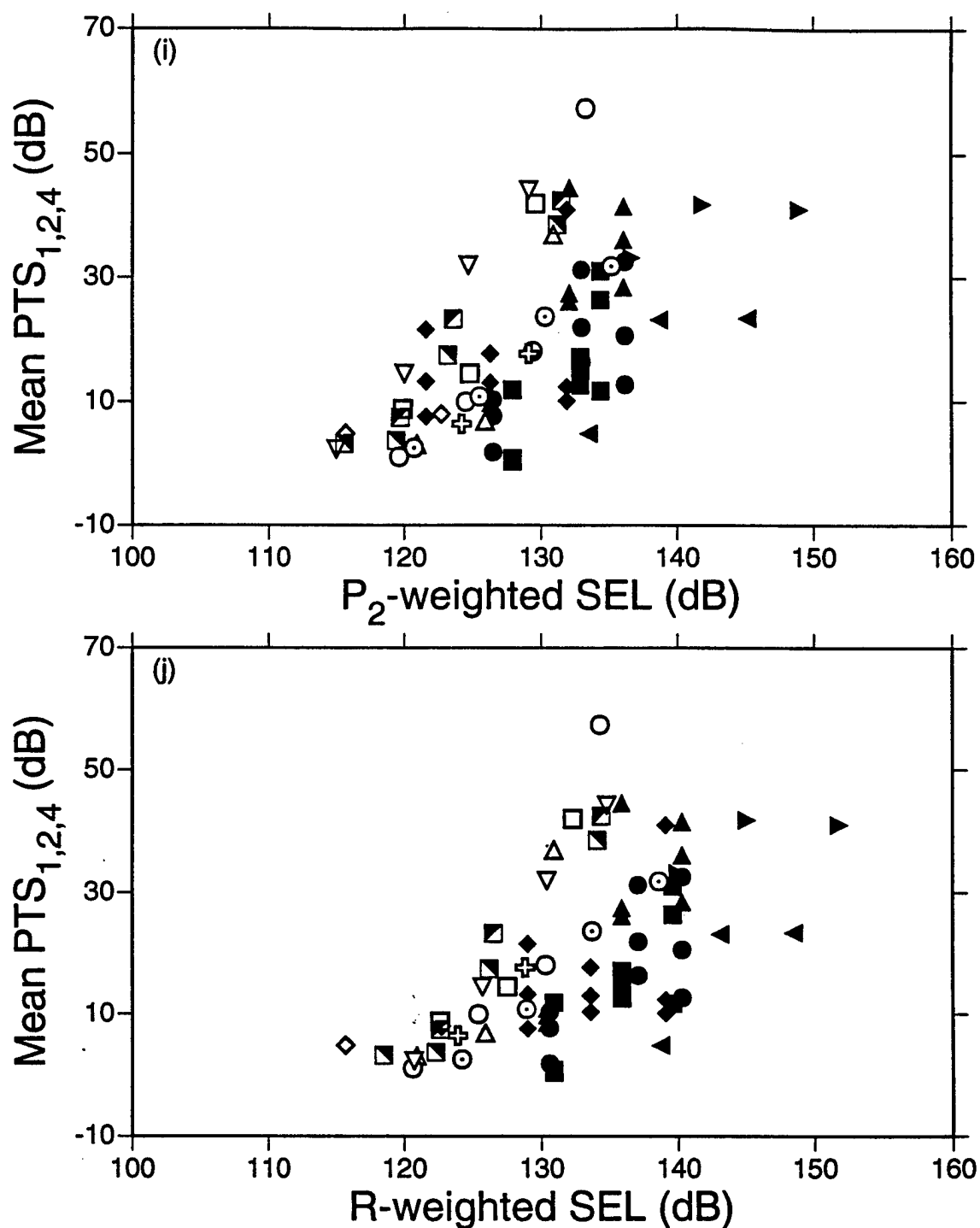
Figure 78. Mean PTS measured at the 1, 2, and 4 kHz audiometric test frequencies for groups of animals exposed to 100 impulses from one of 16 impulse noise sources for different levels of the hazard index: (c) peak SPL_C and (d) Peak SPL_D. The key to the symbols is found in Table 21.

Figure 78. Mean PTS measured at the 1, 2, and 4 kHz audiometric test frequencies for groups of animals exposed to 100 impulses from one of 16 impulse noise sources for different levels of the hazard index: (e) Unweighted SEL and (f) A-weighted SEL. The key to the symbols is found in Table 21.
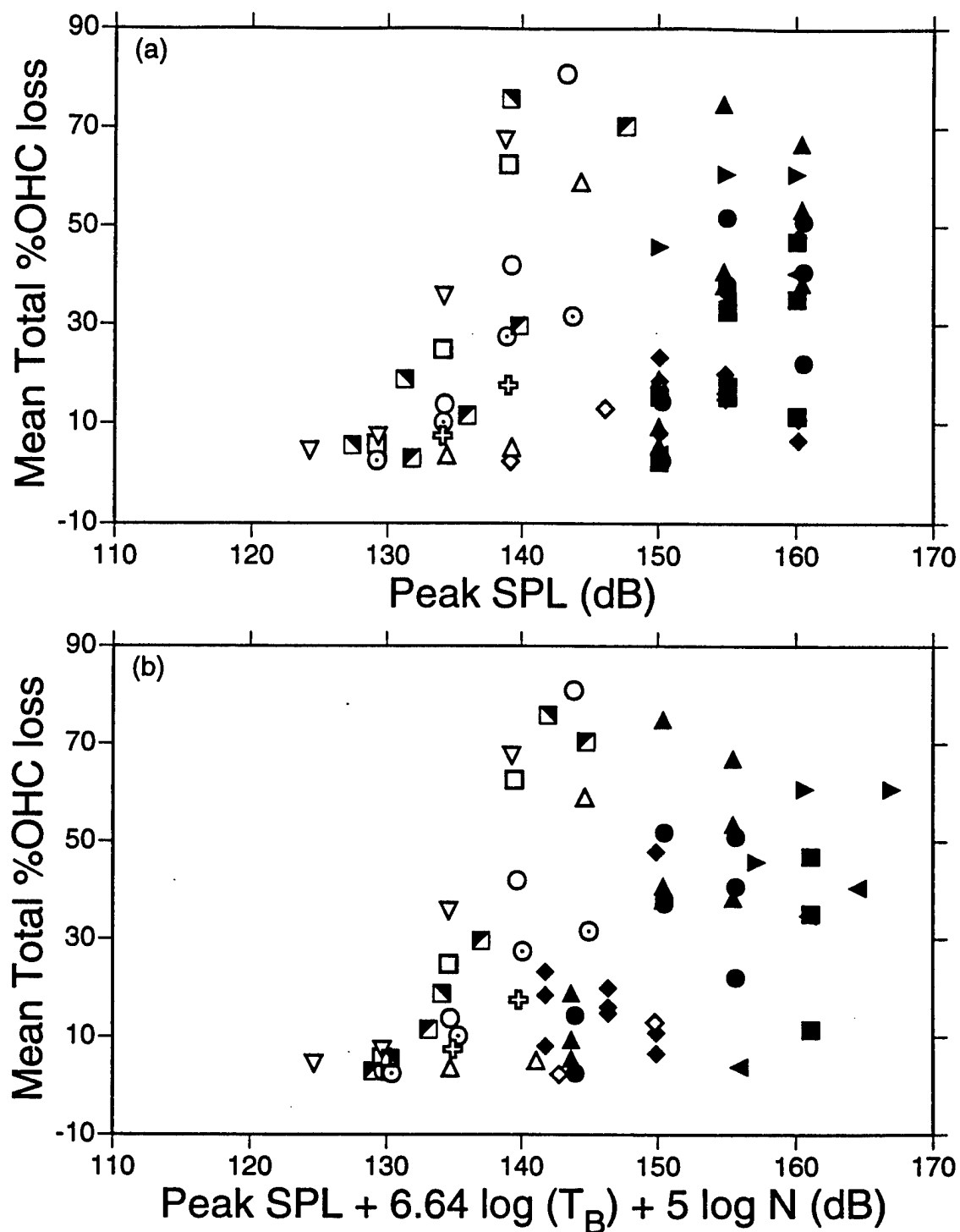
Figure 78. Mean PTS measured at the 1, 2, and 4 kHz audiometric test frequencies for groups of animals exposed to 100 impulses from one of 16 impulse noise sources for different levels of the hazard index: (g) P-weighted SEL and (h) P_1-weighted SEL. The key to the symbols is found in Table 21.

Figure 78. Mean PTS measured at the 1, 2, and 4 kHz audiometric test frequencies for groups of animals exposed to 100 impulses from one of 16 impulse noise sources for different levels of the hazard index: (i) P_2-weighted SEL and (j) R-weighted SEL. The key to the symbols is found in Table 21.
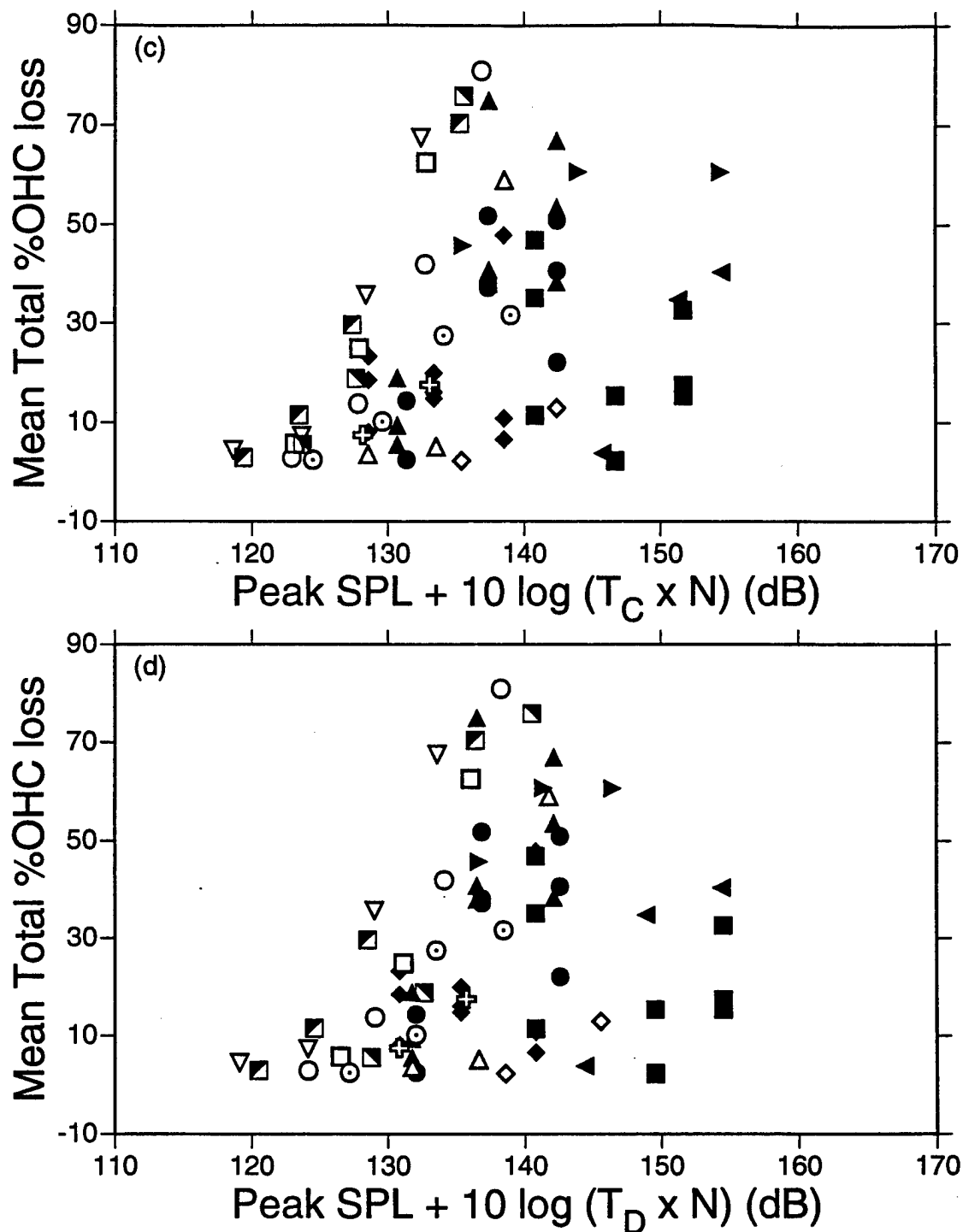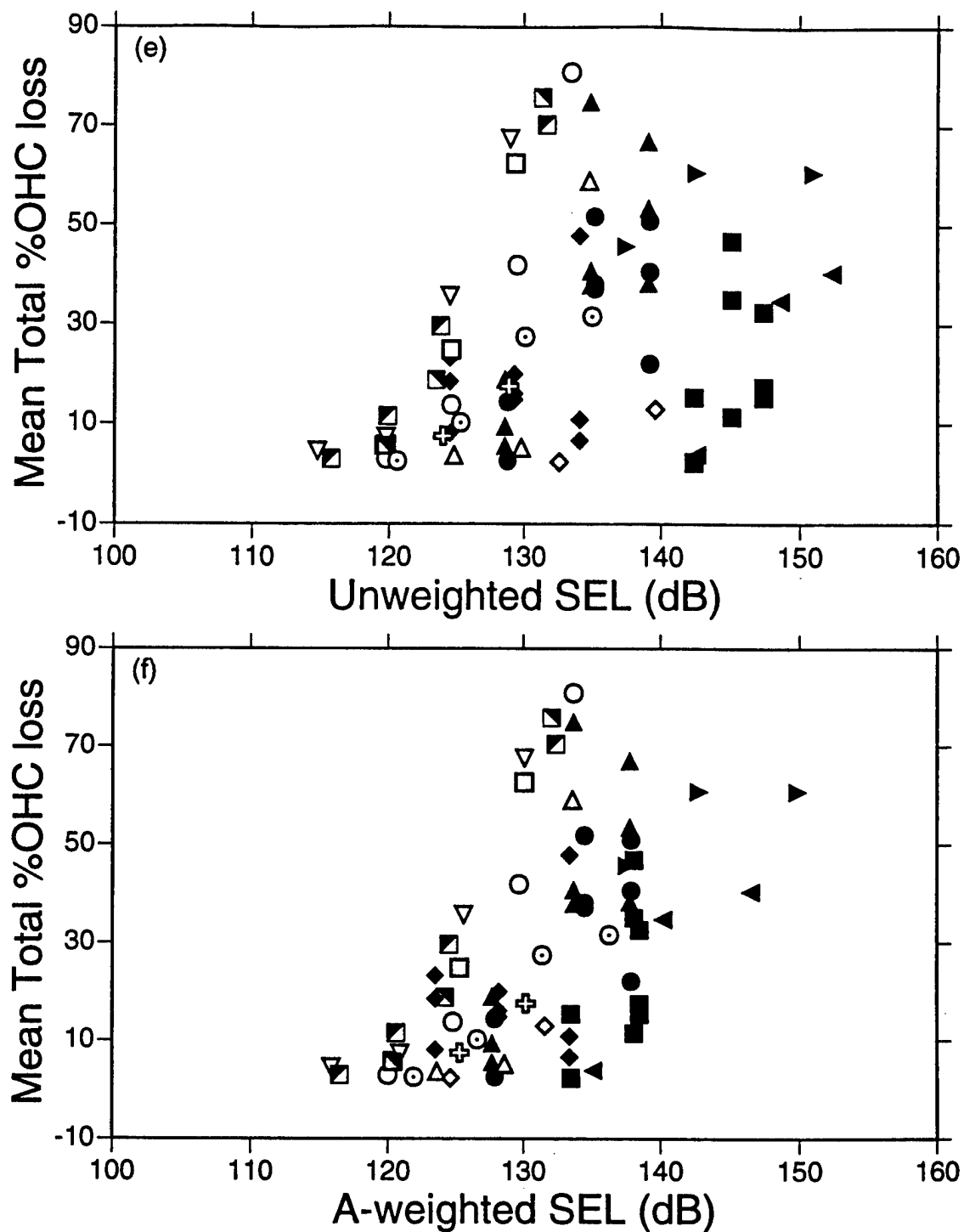
Figure 79. Mean total percent OHC loss for groups of animals exposed to 100 impulses from one of 16 impulse noise sources for different levels of the hazard index: (a) peak SPL and (b) Peak SPL$_B$. The key to the symbols is found in Table 21.
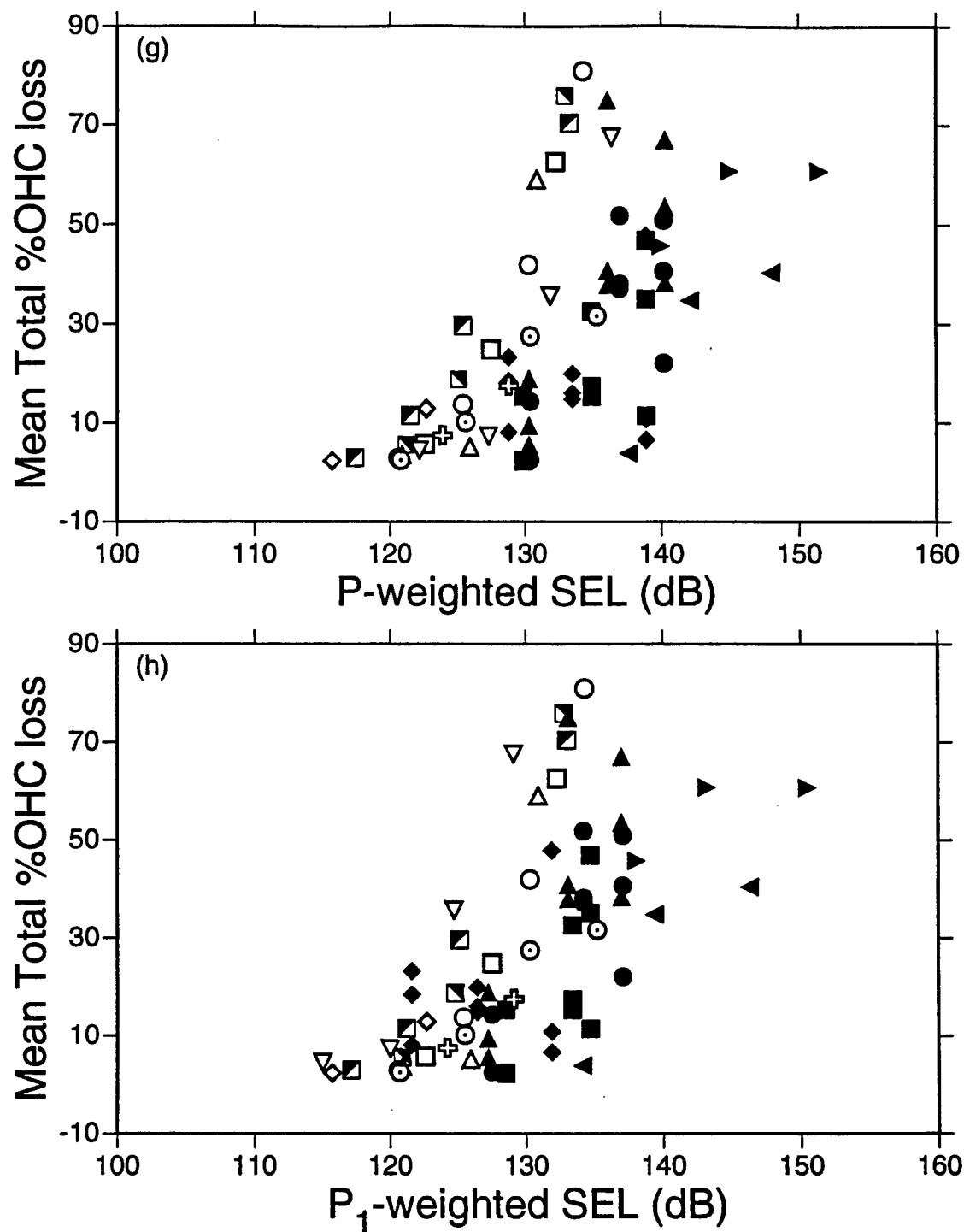
Figure 79. Mean total percent OHC loss for groups of animals exposed to 100 impulses from one of 16 impulse noise sources for different levels of the hazard index: (c) peak SPL_C and (d) Peak SPL_D. The key to the symbols is found in Table 21.
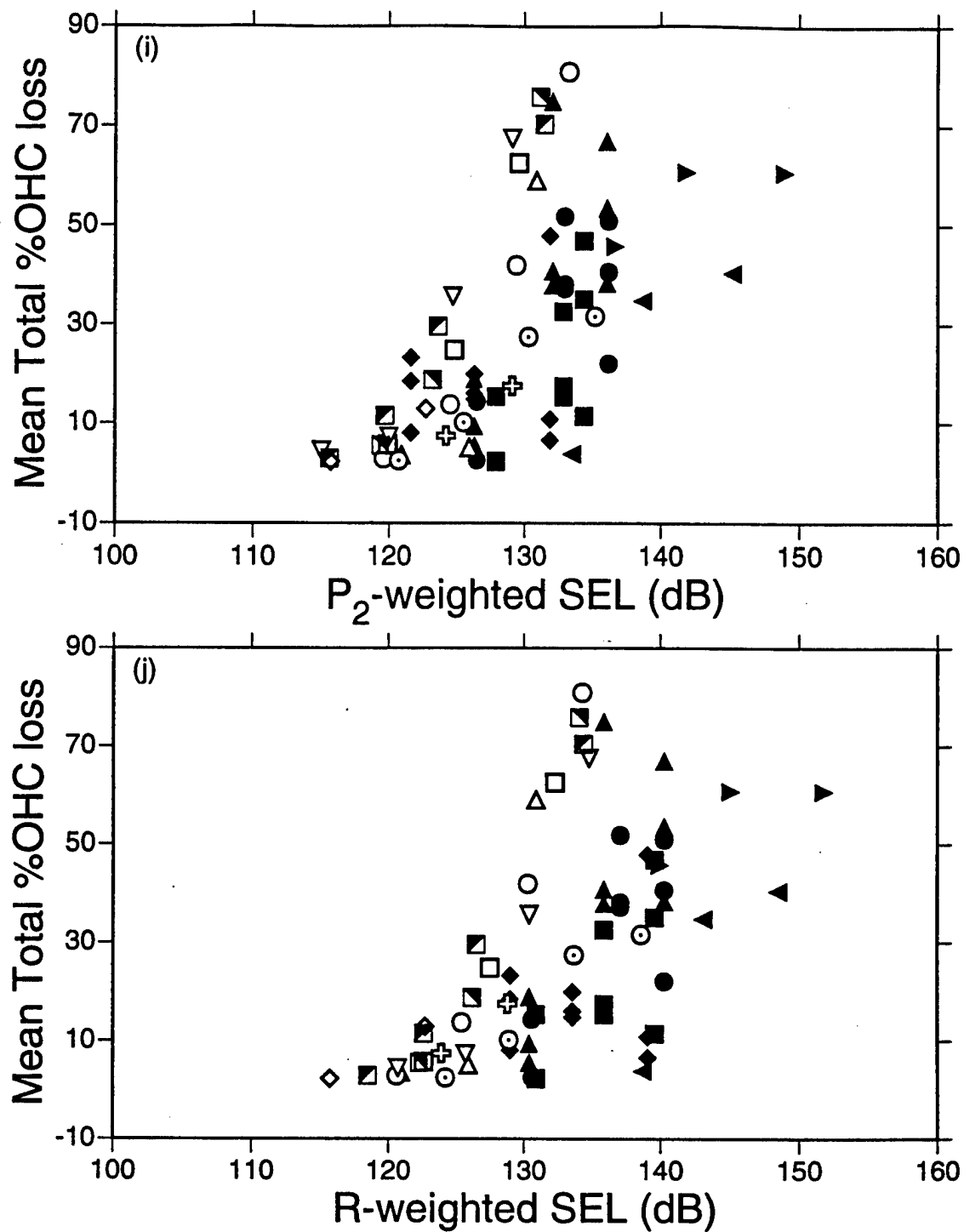
Figure 79. Mean total percent OHC loss for groups of animals exposed to 100 impulses from one of 16 impulse noise sources for different levels of the hazard index: (e)Unweighted SEL and (f) A-weighted SEL. The key to the symbols is found in Table 21.

Figure 79. Mean total percent OHC loss for groups of animals exposed to 100 impulses from one of 16 impulse noise sources for different levels of the hazard index: (g) P-weighted and (h) P_1-weighted. The key to the symbols is found in Table 21.

Figure 79. Mean total percent OHC loss for groups of animals exposed to 100 impulses from one of 16 impulse noise sources for different levels of the hazard index: (i) P_2-weighted SEL and (j) R-weighted SEL. The key to the symbols is found in Table 21.
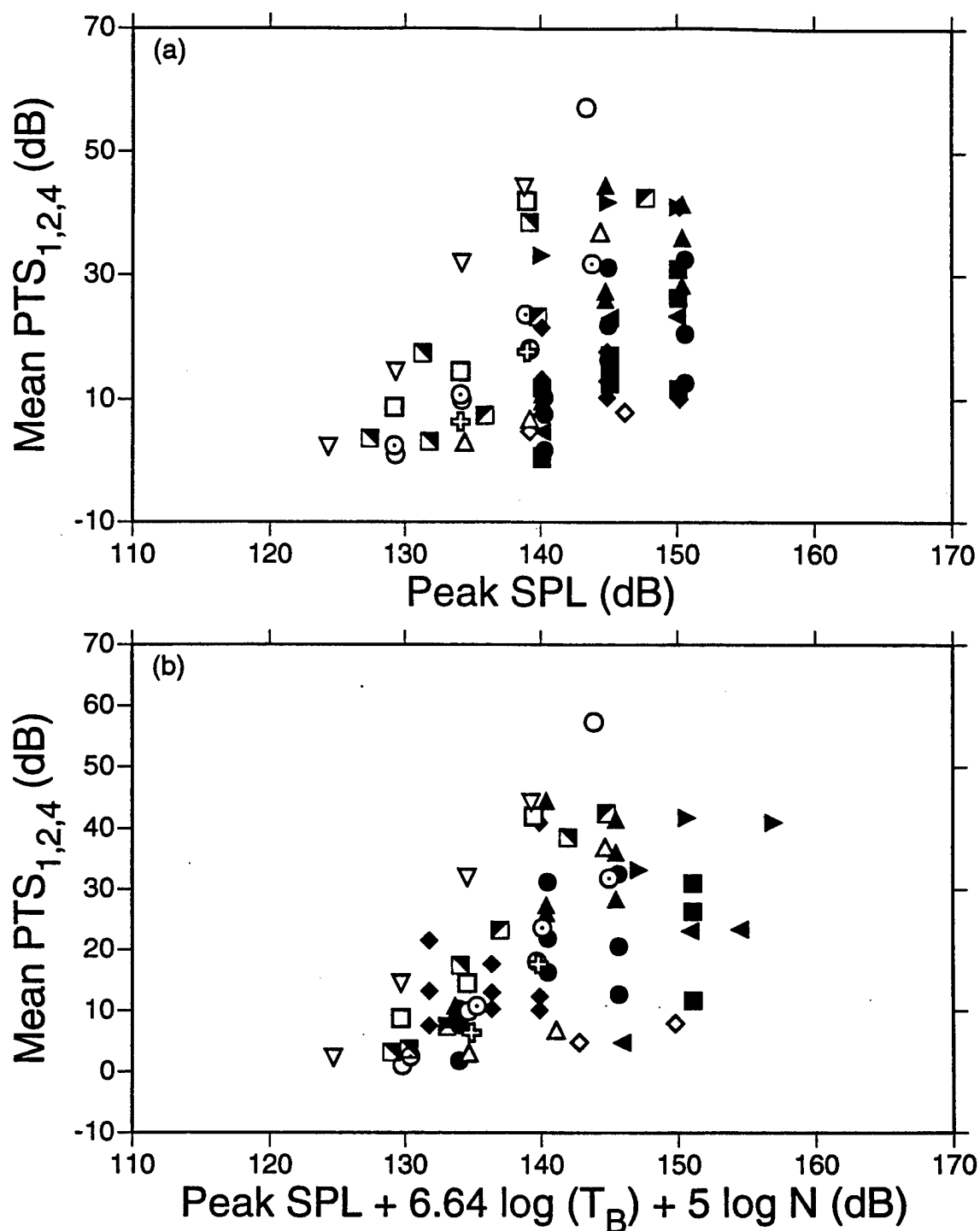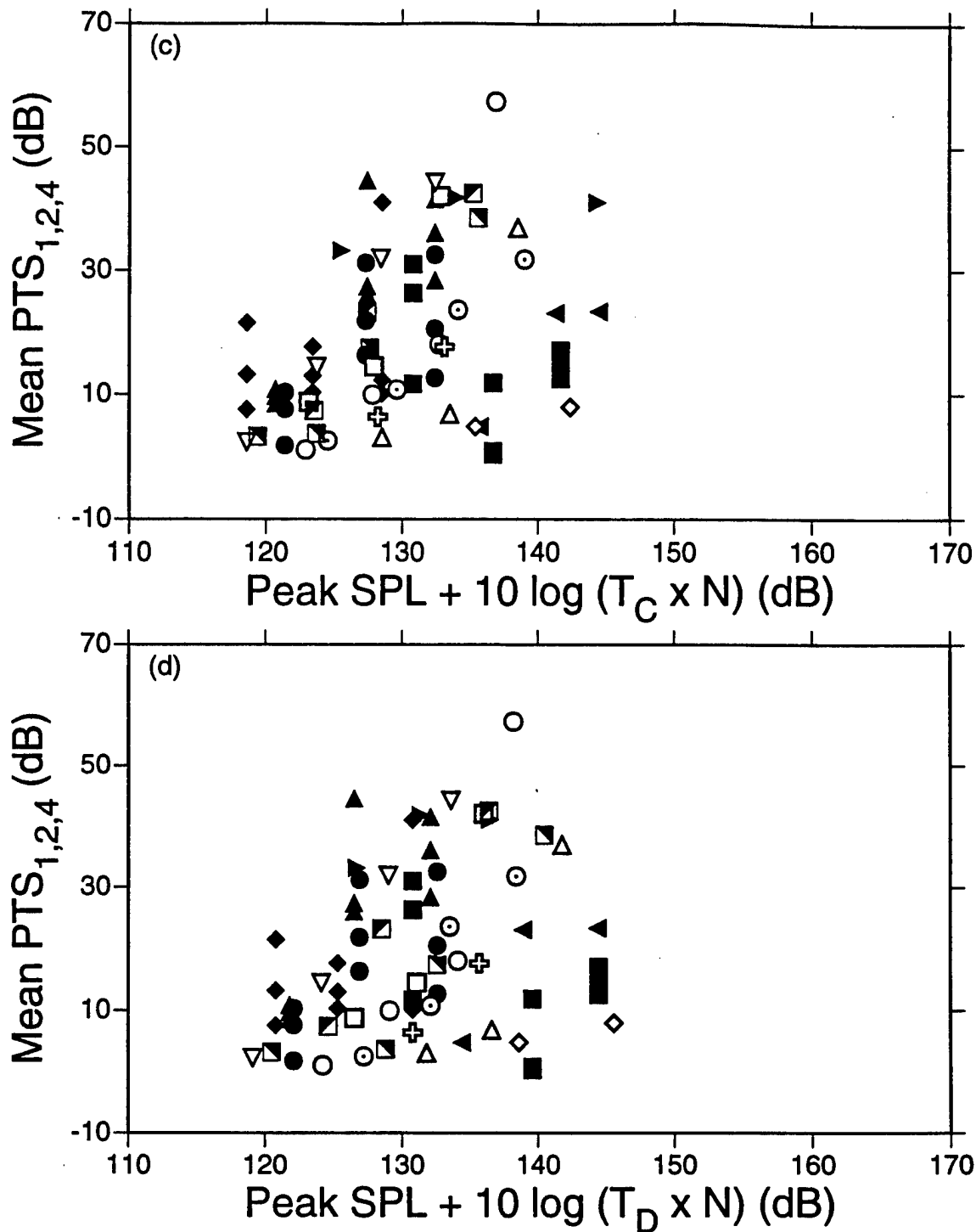
Figure 80. Mean PTS measured at the 1, 2, and 4 kHz audiometric test frequencies for groups of animals exposed to 100 impulses from one of 16 impulse noise sources for different levels of the hazard index: (a) peak SPL and (b) Peak SPL_B. The SUNY data were shifted 10 dB to the left in these figures. The key to the symbols is found in Table 21.
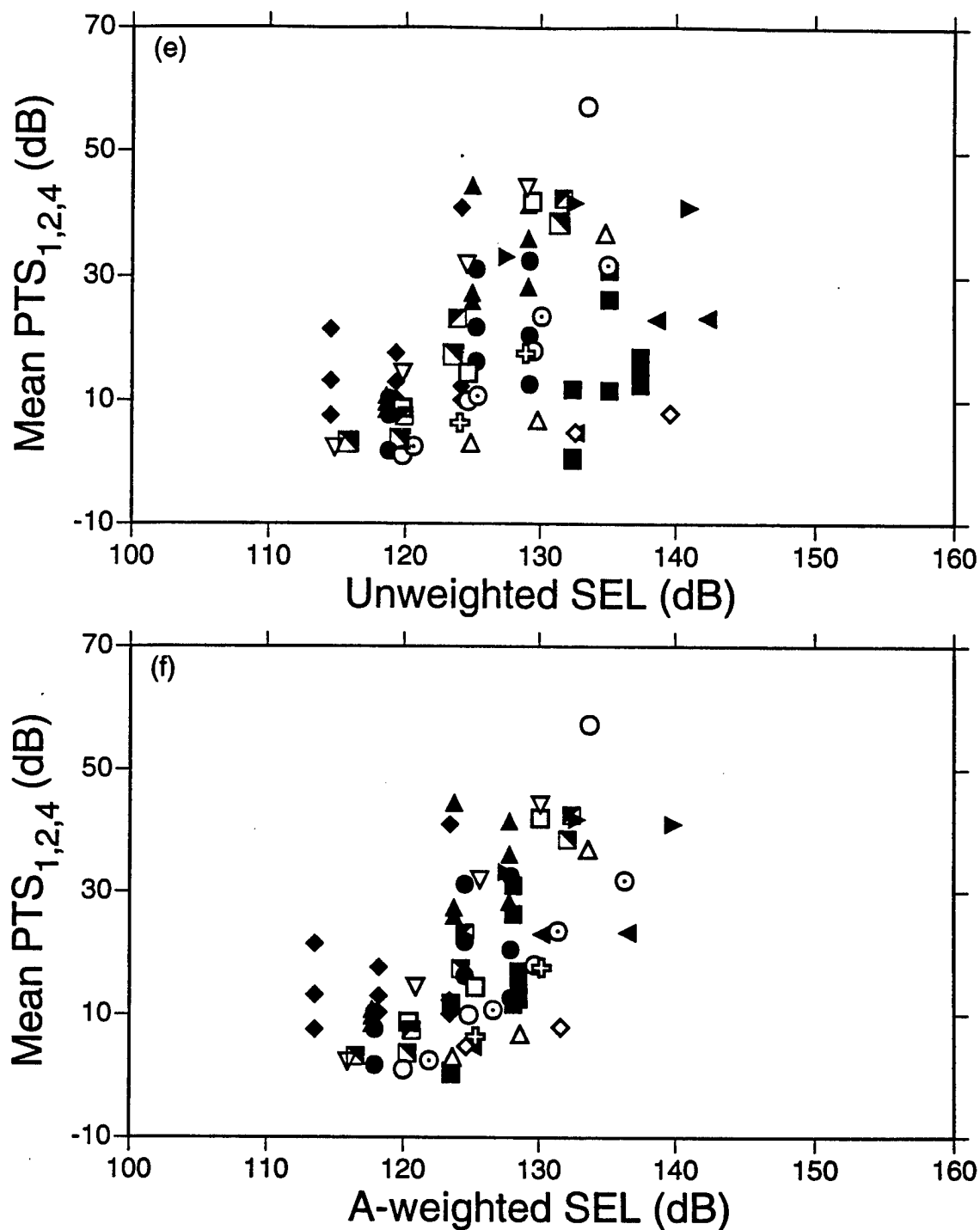
Figure 80. Mean PTS measured at the 1, 2, and 4 kHz audiometric test frequencies for groups of animals exposed to 100 impulses from one of 16 impulse noise sources for different levels of the hazard index: (c) peak SPL_C and (d) Peak SPL_D. The SUNY data were shifted 10 dB to the left in these figures. The key to the symbols is found in Table 21.
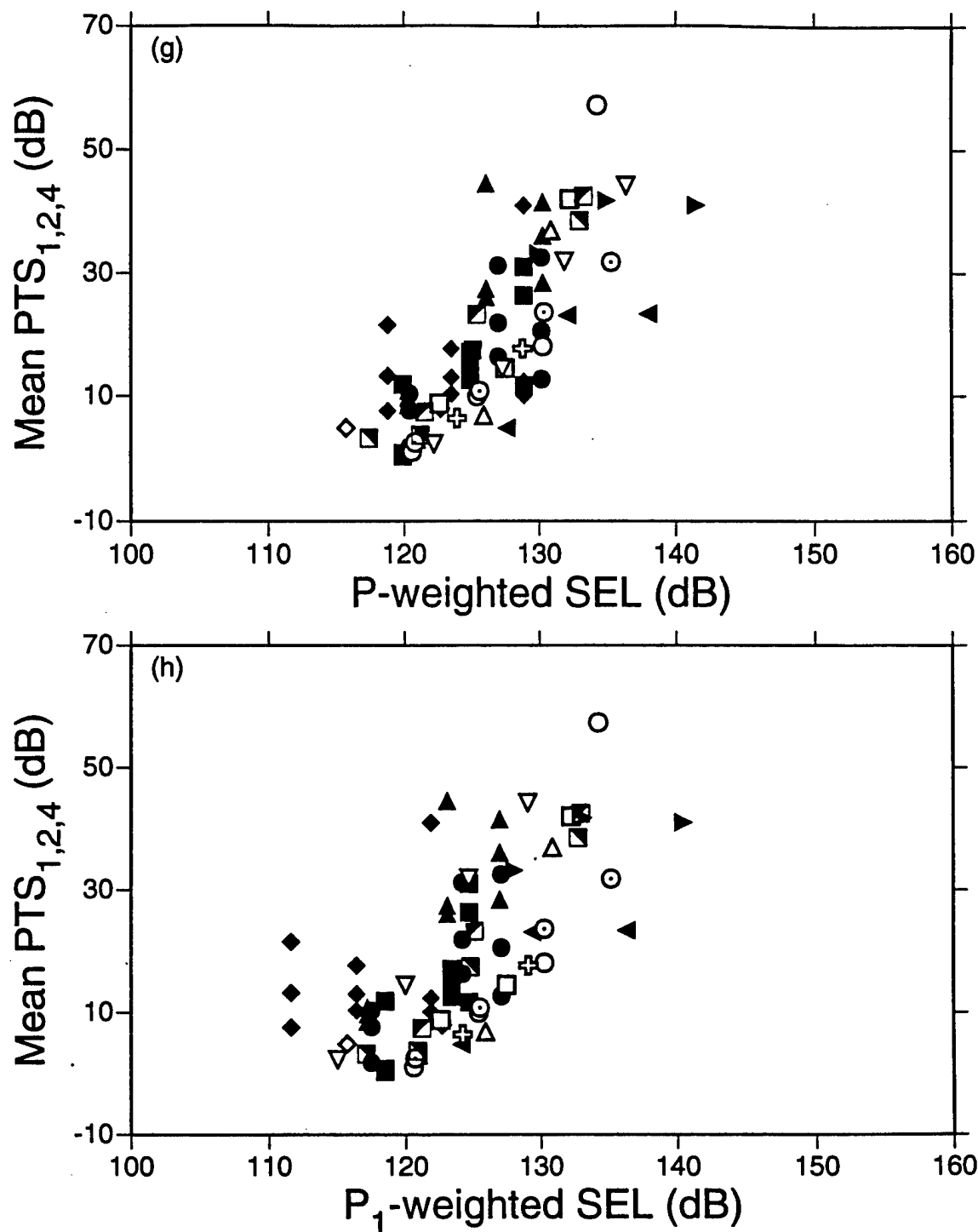
Figure 80. Mean PTS measured at the 1, 2, and 4 kHz audiometric test frequencies for groups of animals exposed to 100 impulses from one of 16 impulse noise sources for different levels of the hazard index: (e) Unweighted SEL and (f) A-weighted SEL. The SUNY data were shifted 10 dB to the left in these figures. The key to the symbols is found in Table 21.
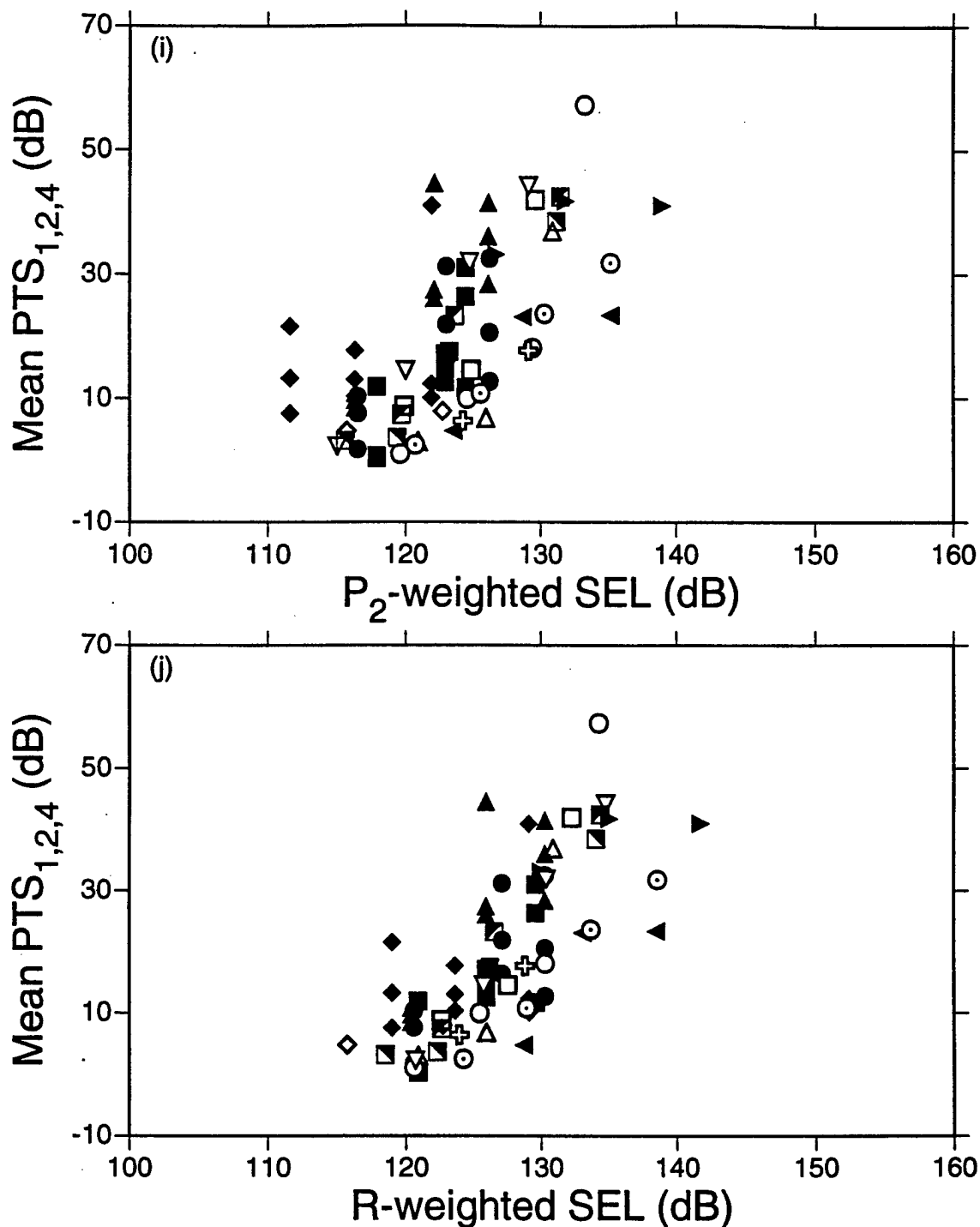
Figure 80. Mean PTS measured at the 1, 2, and 4 kHz audiometric test frequencies for groups of animals exposed to 100 impulses from one of 16 impulse noise sources for different levels of the hazard index: (g) P-weighted SEL and (h) P_1-weighted SEL. The SUNY data were shifted 10 dB to the left in these figures. The key to the symbols is found in Table 21.

Figure 80. Mean PTS measured at the 1, 2, and 4 kHz audiometric test frequencies for groups of animals exposed to 100 impulses from one of 16 impulse noise sources for different levels of the hazard index: (i) P_2-weighted SEL and (j) R-weighted SEL. The SUNY data were shifted 10 dB to the left in these figures. The key to the symbols is found in Table 21.
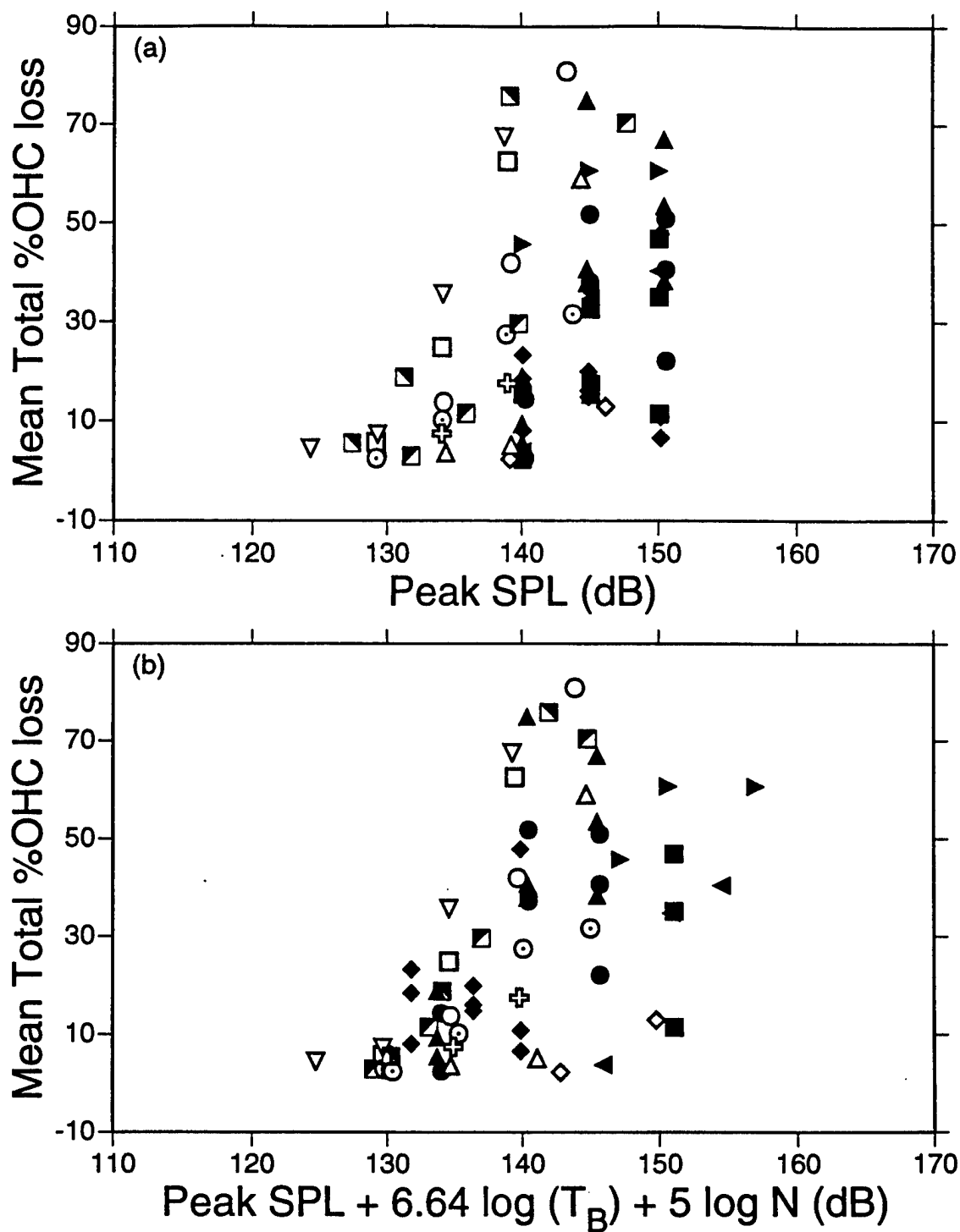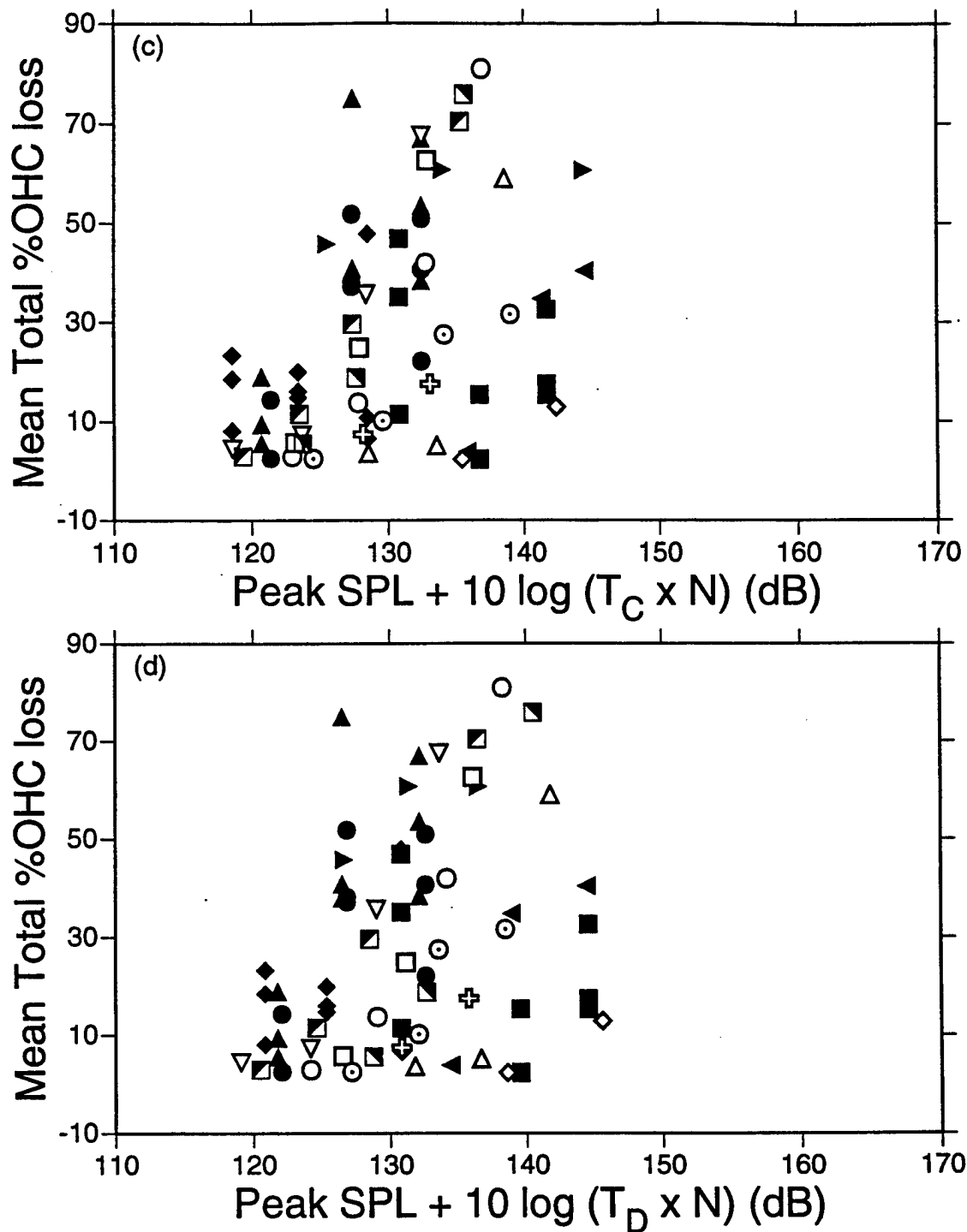
Figure 81. Mean total percent OHC loss for groups of animals exposed to 100 impulses from one of 16 impulse noise sources for different levels of the hazard index: (a) peak SPL and (b) Peak SPL_B. The SUNY data were shifted 10 dB to the left in these figures. The key to the symbols is found in Table 21.

Figure 81. Mean total percent OHC loss for groups of animals exposed to 100 impulses from one of 16 impulse noise sources for different levels of the hazard index: (c) peak SPL_C and (d) Peak SPL_D. The SUNY data were shifted 10 dB to the left in these figures. The key to the symbols is found in Table 21.
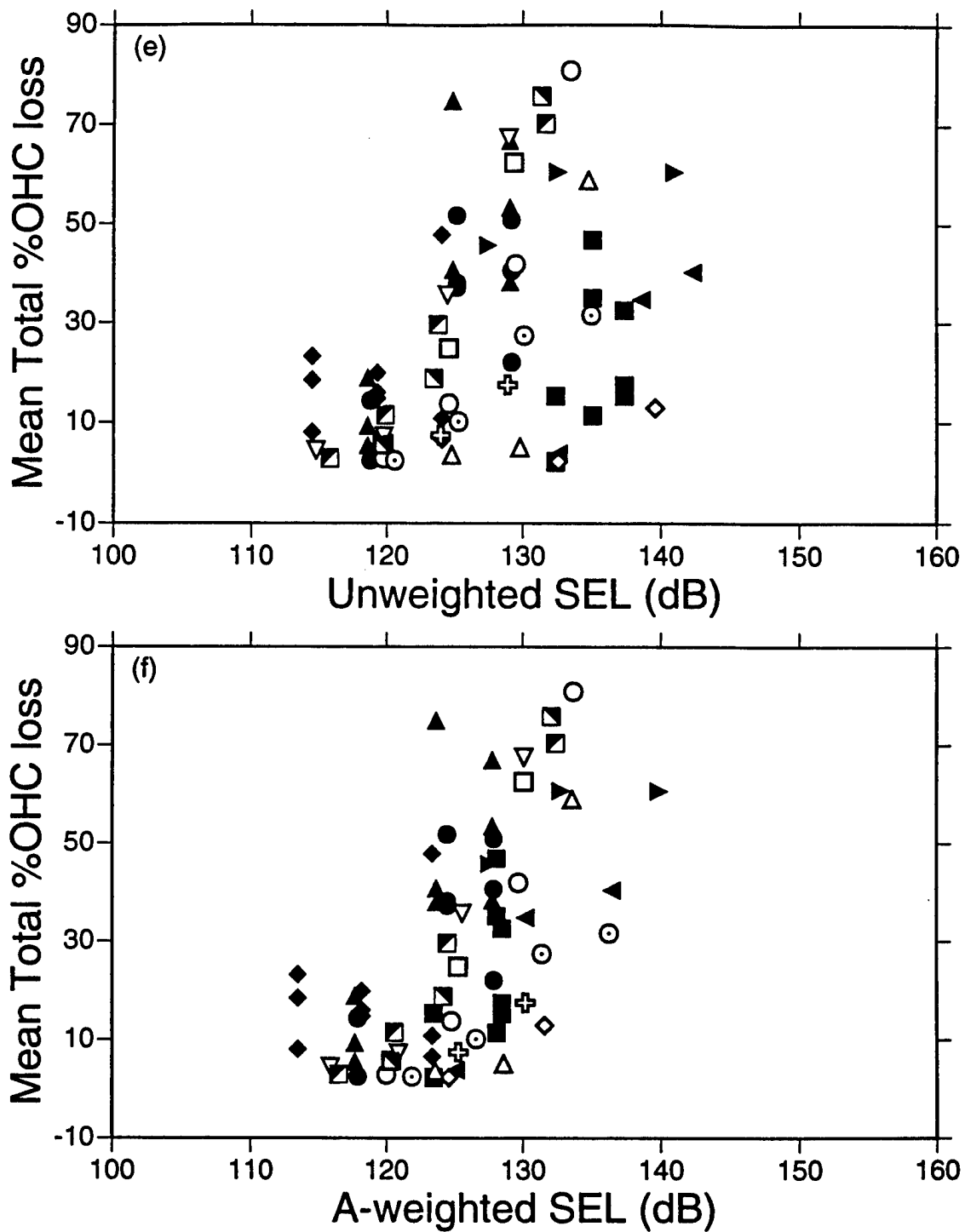
Figure 81. Mean total percent OHC loss for groups of animals exposed to 100 impulses from one of 16 impulse noise sources for different levels of the hazard index: (e)Unweighted SEL and (f) A-weighted SEL. The SUNY data were shifted 10 dB to the left in these figures. The key to the symbols is found in Table 21.
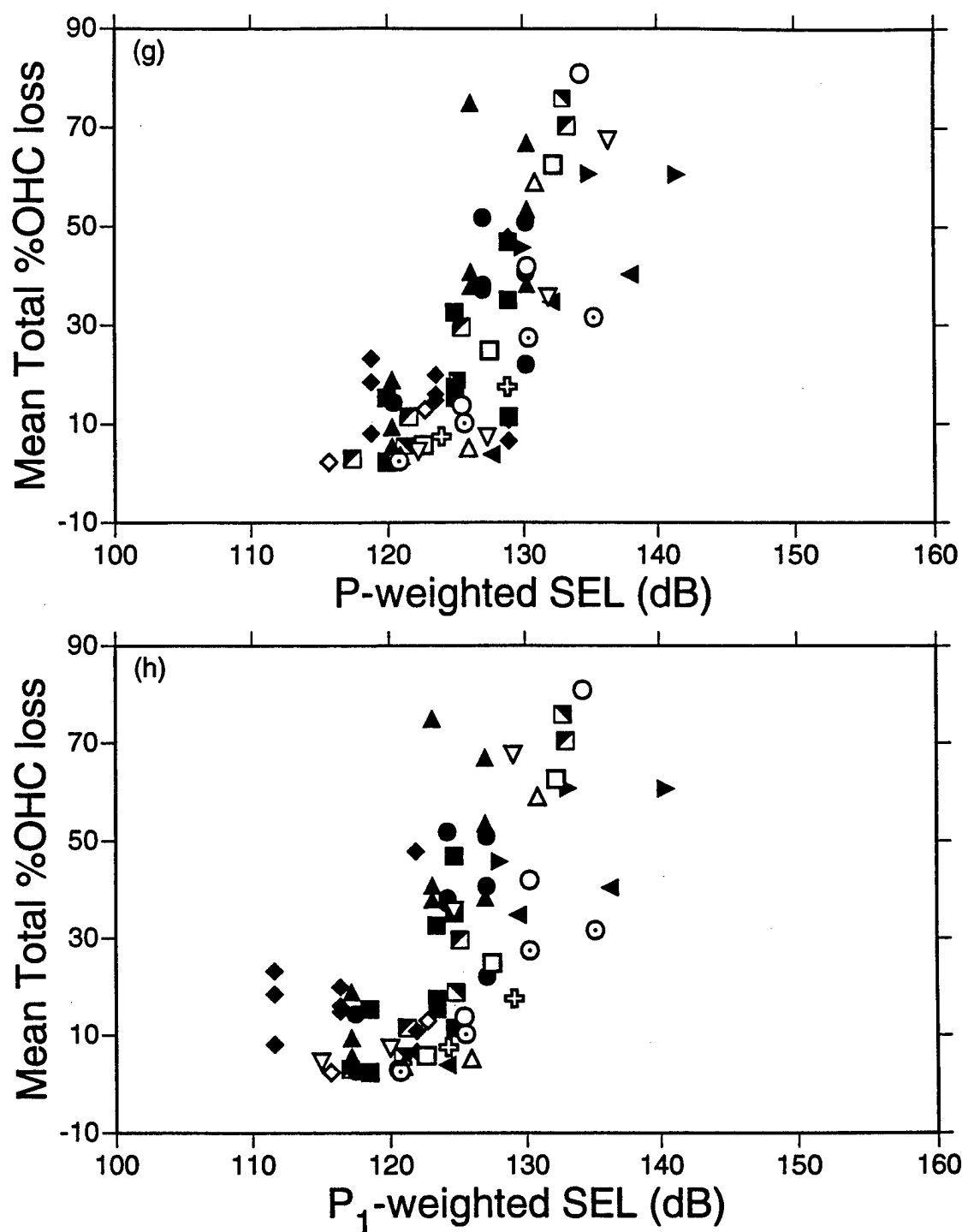
Figure 81. Mean total percent OHC loss for groups of animals exposed to 100 impulses from one of 16 impulse noise sources for different levels of the hazard index: (g) P-weighted and (h) P_1-weighted. The SUNY data were shifted 10 dB to the left in these figures. The key to the symbols is found in Table 21.
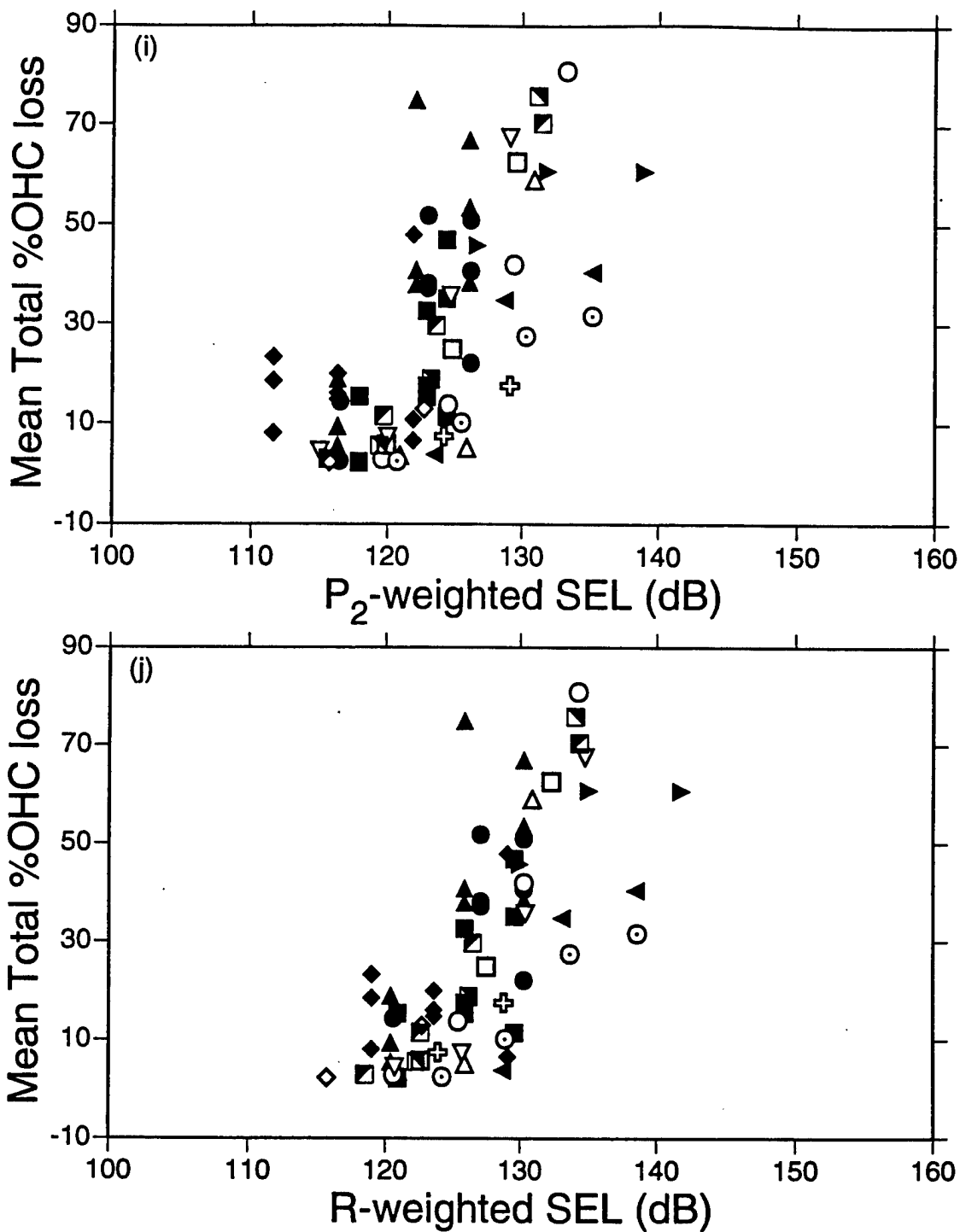
Figure 81. Mean total percent OHC loss for groups of animals exposed to 100 impulses from one of 16 impulse noise sources for different levels of the hazard index: (i) P_2-weighted SEL and (j) R-weighted SEL. The SUNY data were shifted 10 dB to the left in these figures. The key to the symbols is found in Table 21.